

.....

**CURRICULUM DEVELOPMENT
IN THE ELEMENTARY SCHOOL**

EXPLORATION SERIES IN EDUCATION
Under the Advisory Editorship
of
JOHN GUY FOWLKES

Curriculum Development in the Elementary School

W. RAY RUCKER

Dean, National College of Education

MLSU - CENTRAL LIBRARY



12689EX



HARPER & BROTHERS, PUBLISHERS, NEW YORK

To WILLIAM H. BURTON
My Teacher

CONTENTS

| | |
|---|------|
| EDITOR'S INTRODUCTION | xi |
| PREFACE | xiii |
| Part 1. Curriculum Design | |
| <i>Introduction to Part I</i> | 2 |
| 1. Purposes of Elementary Education in a Democracy | 5 |
| <i>Democracy as a Total Way of Life</i> | 7 |
| <i>Purposes of Elementary Education</i> | 13 |
| <i>Summary</i> | 40 |
| 2. The Social and Emotional Climate for Learning | 43 |
| <i>Types of Climates Engendered by Social Organization</i> | 44 |
| <i>Social Climates and Personality</i> | 47 |
| <i>The Coöperation-Competition Expectancy</i> | 54 |
| <i>Patterns of Discipline in the Classroom</i> | 57 |
| <i>Summary</i> | 60 |
| 3. Democratic, Problem-Solving Process in the Classroom | 62 |
| <i>What Is the Democratic, Problem-Solving Process?</i> | 62 |
| <i>The Problem Project</i> | 66 |
| <i>A Problem Project Log: How We Look Out into the Universe</i> | 70 |
| <i>Summary</i> | 79 |
| 4. Curriculum Individualization | 82 |
| <i>Introduction</i> | 82 |
| <i>Discovering the Individual Learner</i> | 86 |

| | |
|--|-----|
| <i>Ways of Meeting Differences Through the Curriculum</i> | 98 |
| <i>Summary</i> | 117 |
| 5. Curriculum Continuity | 119 |
| <i>Continuity in Developmental Tasks</i> | 120 |
| <i>Continuity in Persistent Life Situations</i> | 126 |
| <i>Continuity in the Ever-Expanding Horizons of Experience</i> | 128 |
| <i>Continuity in Problem-Solving</i> | 134 |
| <i>Discontinuity in the Authoritarian, Lock-Step System</i> | 138 |
| <i>Summary</i> | 139 |
| 6. Evaluating and Reporting Pupil Progress | 141 |
| <i>The Purpose and Function of Evaluation</i> | 141 |
| <i>Instruments and Records</i> | 146 |
| <i>Assigning Marks</i> | 161 |
| <i>Reporting Pupil Progress to Parents</i> | 164 |
| <i>Promotion Policies</i> | 168 |
| <i>Summary</i> | 171 |

Part II. The Elementary School Curriculum in Action

| | |
|---|-----|
| <i>Introduction to Part II</i> | 174 |
| 7. Learning Experiences of 5-Year-Olds | 175 |
| <i>Experiences with a Sugar Plum Tree</i> | 175 |
| <i>The Kindergarten Year</i> | 185 |
| <i>Purposes and Concerns of Kindergarten</i> | 192 |
| <i>Summary</i> | 195 |
| 8. Learning Experiences of 6-Year-Olds | 198 |
| <i>First Day for First Graders</i> | 198 |
| <i>A Comprehensive Readiness Program</i> | 203 |
| <i>Beginning Reading for Some Children</i> | 204 |
| <i>The Project on Pets</i> | 206 |
| <i>Summary</i> | 214 |

| | | |
|-----|--|-----|
| 9. | Learning Experiences of 7-Year-Olds | 216 |
| | <i>Recalling the Year's Highlights</i> | 216 |
| | <i>How Plants Grow</i> | 218 |
| | <i>How Animals Grow</i> | 221 |
| | <i>The Weekly Newspaper</i> | 229 |
| | <i>Summary</i> | 231 |
| 10. | Learning Experiences of 8-Year-Olds | 234 |
| | <i>Improving Skills Through Making Cookies</i> | 238 |
| | <i>Independent and Individualized Study</i> | 241 |
| | <i>Planning for Tomorrow</i> | 244 |
| | <i>Test Results and Other Evidence</i> | 245 |
| | <i>Summary</i> | 245 |
| 11. | Learning Experiences of 9-Year-Olds | 248 |
| | <i>A Project on Insects</i> | 248 |
| | <i>What We Want to Find Out</i> | 250 |
| | <i>What We Want to Do</i> | 252 |
| | <i>Summary</i> | 268 |
| 12. | Learning Experiences of 10-Year-Olds | 269 |
| | <i>Touring Latin America</i> | 270 |
| | <i>Accent on Fine Arts</i> | 286 |
| | <i>Summary</i> | 292 |
| 13. | Learning Experiences of 11-Year-Olds | 294 |
| | <i>Dramatizing Tom Sawyer and Hiawatha</i> | 294 |
| | <i>Individualization in Learning</i> | 302 |
| | <i>Dramatizing Geography</i> | 304 |
| | <i>Summary</i> | 308 |
| 14. | Learning Experiences of 12-Year-Olds | 309 |
| | <i>A Project on Interrelation of the Arts</i> | 309 |
| | <i>A Language Arts Class</i> | 317 |
| | <i>Summary</i> | 324 |

| | |
|--|-----|
| 15. Learning Experiences of 13-Year-Olds | 326 |
| <i>A Class Project on Weather</i> | 327 |
| <i>Summary</i> | 339 |
| Part III. Improving the Curriculum | |
| <i>Introduction to Part III</i> | 342 |
| 16. Curriculum Change as an Aspect of Cultural Change | 345 |
| <i>The Nature of Cultural Change</i> | 348 |
| <i>Implications of Cultural Dynamics for Curriculum Change</i> | 355 |
| <i>Summary</i> | 361 |
| 17. Curriculum Improvement Programs | 363 |
| <i>Principles Governing Curriculum Improvement Programs</i> | 364 |
| <i>The Delta County Curriculum Project</i> | 375 |
| <i>Summary</i> | 388 |
| 18. Curriculum Improvement Through Self-Evaluation | 391 |
| <i>Evaluative Criteria</i> | 396 |
| <i>A School District Evaluates Its Program</i> | 398 |
| <i>Summary</i> | 404 |
| INDEX | 407 |

EDITOR'S INTRODUCTION

A wide variety of so-called teaching plans, methods, or techniques of teaching in the elementary school have appeared in the United States of America during the 40-year period 1920-1960. Some of the more widely recognized of these in elementary school practice are the project method, the problem solution method, the Winnetka Plan, and the Dalton System. In addition to these specifically labeled patterns of elementary school teaching, several points of view concerning effective learning in the elementary school have also been presented. Some of the points of view which have received considerable attention are identified by such terms as *learning experiences*, *learning activities*, *pupil activity*, *democracy in teaching*, *democracy in learning*, and so forth.

As often happens in connection with "movements" among specialized workers, including those engaged in the preparation of teachers and those who are teaching in the elementary schools, the devotees of a particular point of view are sometimes indicted as evangelical members of a professional cult. Possibly, deep conviction concerning the value of a given point of view and/or method concerning teaching in the elementary school has been overemphasized. On the other hand, an examination of the teaching practices of what may be called artist teachers throughout the ages reveals that most if not all of the so-called cults among theorists or practitioners of teaching have been recognized and utilized by these artist teachers.

The work presented here is an interesting report on the theory and exemplification of good teaching and effective learning in the classroom. Cognizance has been taken of the psychological nature of children, of the personal skills and habits which youngsters need in contemporary society, along with essential subject matter

content. Ardent supporters of varying points of view concerning both the atmosphere and process of teaching and learning will find much with which they are familiar and which they will applaud in this volume. The reports on actual classroom teaching and learning reflect an ingenious interest in and significant accomplishment by teachers and boys and girls on whose behavior the reports are based.

The author of this book is well qualified to have produced it. His substantial experience includes that of classroom teacher, consultant to several important curriculum studies, and member of the staffs of institutions of higher learning devoted to the preparation of teachers. At the present time Dr. Rucker is Dean of the National College of Education at Evanston, Illinois, which students of education recognize as one of the distinguished agencies for the preparation of workers in our elementary schools.

This book deserves the careful reading and reflection of all those engaged in the preparation of elementary teachers as well as those who are now teaching in our elementary schools.

JOHN GUY FOWLKES

October, 1939

The prevailing concepts of the curriculum and of curriculum development need clarification. The professional educational world lacks unity of thought on curriculum design and therefore is more vulnerable than need be in the face of irresponsible attacks on the efficacy of the modern curriculum. Textbooks on the curriculum too often are hardly more than treatments of method in the various subject matter areas. This atomistic approach has, unfortunately, stimulated each area, like reading or arithmetic, to go its own way and develop its own special interest methodology. Such a curriculum is the sum of several unrelated parts. The point of view developed in this volume is that the curriculum should have a design which conditions all methodology into a unified program. The unity of curriculum design and classroom rationale presented in this volume, then, focuses attention upon the way basic skills are taught or the way children come into contact with subject matter in any area within the larger curriculum process which is designed to achieve the well-known and widely professed goals of American education.

The instructional details in each area should be reserved for the methods courses in teacher preparation programs when these have been properly oriented to the larger curriculum design. Likewise, the history and tradition of education may be left to the course in the history of education. The endless debate over theories of learning and the presentation of the thousands of investigations which make up its technical subject matter may safely reside in the courses in educational psychology.

Wherever the sciences of education present to the practitioner a "best" answer, that answer takes the spotlight and a vigorous attempt is made to spell out that answer in behavioral terms.

Long surveys of possible answers and theories have been avoided. Every effort has been made to present the reader with a workable pattern for curriculum design rather than a welter of conflicting ideas.

The author has presented only those materials and data from supporting and allied fields of knowledge necessary to give a unified picture of the pattern of curriculum as the larger whole into which each of the pieces fit. Consistently, from chapter to chapter, there is presented a viewpoint and a conception of the curriculum which preserves for the reader a vision of the whole. Further, the present treatment of the curriculum spotlights the democratic, problem-solving design of a truly American education and focuses upon the problems which learners and teachers face daily in the process of living and learning. In reply to some well-meaning critics of American education, this volume demonstrates that democratic process in the classroom does not reduce individual performance to the level of mediocrity. Instead, it shows the workings of a democratic process that exalts the uniqueness and difference of the individual. It accords each person dignity and worth in his own right and in terms of his unique contributions to group endeavors. It presents a far less expensive way of dealing with the education of the gifted child than the typical schemes set forth by some critics.

The author is aware that some teachers, administrators, and lay people lack faith in the democratic, problem-solving process for the classroom. However, he takes the position that America's educational system should try to develop better behaviors in each succeeding generation which, in turn, contribute to a maturing society. What should be done, then, must be attempted despite the practical difficulties.

Part I deals with the *design* of the curriculum. The design indicates how all of the factors which come to bear on the educational process are organized and harmonized into a plan for action. This pattern of process must operate continuously as the whole which conditions the parts. Verbalisms about democracy or scientific

method in teaching are of no consequence; the curriculum process must be affected. For then, and only then, democratic, scientific methods will direct the teachers as they handle individual needs, classroom climate, discipline, and subject matter. This design is a blueprint for achieving the purposes of education; and the purposes cannot be considered apart from design. The general purposes of education are derived from the evolving goals of society. The emerging purposes of learners are specific, individual, and unique, but, nevertheless, these individual purposes are conditioned by the goals of the society within which they emerge. Curriculum design, likewise, is a blueprint for teacher-pupil relationships and the emotional, social climate of the classroom. It conditions teacher personality, potentially, to a significant degree. A good teaching personality does not exist in a vacuum. It too, must meet the conditions of design. This design incorporates ways of meeting individual differences, provisions for continuity, and evaluating and reporting practices.

Part II of this volume deals with detailed descriptions and full analyses of the curriculum in the better elementary schools of today. Students are given an opportunity to "see" the curriculum in action from on-the-scene reports. Instructors should supplement the reading of Part II with observations of "live" school situations. These observations serve as outside reading.

Part III deals with *how to improve* the curriculum and promote the processes of orderly curriculum change. Since change in the curriculum depends upon change in the people who design and are involved in it, considerable space is given to how cultural change affects curriculum change, to the in-service programs of teacher education, to action research, and to coöperative self-evaluation.

This textbook has been developed for the typical upper division or graduate course in the elementary school curriculum. Should the book be used primarily for undergraduate students, the instructor may elect not to use Part III, "Improving the Curriculum," since the contents are directed primarily to in-service teacher and administrative personnel. Very often, this course is offered to both

graduates and undergraduates simultaneously. In this case, an instructor will be able to use the book to advantage in adapting the course to both types of students.

The author is indebted to many persons for their varied contributions to this book. Norma Rucker, wife of the author, contributed in many ways. Her experience as a primary teacher was particularly valuable. Special acknowledgment is due to Theodore Madden, Ethel Macintyre, and Mildred Kiefer for their technical and editorial assistance in the preparation of the manuscript. Credit is due to Robert Morrow, Superintendent of Schools, Tucson (Arizona) Public Schools, to Paul Misner, Superintendent, Glencoe (Illinois) Public Schools, and to members of their staffs who so kindly assisted the author in ways that will become obvious to the reader as he reads through the book. Credit also is due the teachers and administrators of the Delta County (Texas) Public Schools and of the Casa Grande (Arizona) Public Schools for materials developed in those communities which have become a part of this book.

W. RAY RUCKER

Evanston, Illinois
October, 1959

PART I

.....

CURRICULUM DESIGN

INTRODUCTION

SCIENCE, DEMOCRACY, AND THE CURRICULUM

Science and democracy are the watchwords of our twentieth-century culture and in the years ahead will influence the destiny of the world more than any other pair of concepts. Democracy is primarily a process of living together. Too often it is thought of only as a form of government. A democratic government based on constitutional processes sets many conditions for interpersonal relationships; however, alone it cannot guarantee democracy in these relationships. A democratic government ultimately depends for its survival upon the development of democratic relationships among people in their everyday living. In making use of the Hebraic-Christian-Humanist ethics, democracy has its finest interpretation in everyday human relations.

Science provides democracy with a way of thinking and deliberating which helps to eliminate superstition, prejudice, bias, and ignorance in the conduct of group decision-making. It gives to deliberative groups a method of verification and intelligence without which democracy will fail in practice. Both democracy and science are advanced by the use of human intelligence, and, in turn, they furnish the climate in which human intelligence can be advanced in the individual.

Thus, these twin concepts—science and democracy—have much in common. Both utilize the process of problem-solving. Both subject findings and hypotheses to multiple verification. Both provide for and respect individual achievement. Neither is a closed system, requiring only time to complete the whole; both are open-ended to the future, presenting boundless horizons for the growth and development of civilization. Together they provide a design for a safer and happier world.

The program of the elementary school increasingly must draw

from these twin sources for both content and methodology. Teachers are realizing more and more that science is a *process of discovery* and problem-solving for children as well as a *collection of data to be learned*. Science, the process, may operate in the study of any subject i.e., art, social studies, or arithmetic. Teachers are becoming aware, moreover, that democracy is a *way of behaving* in everyday classroom living as well as a *chronicle of good deeds* or a political system. Studying about democracy is different from behaving in a democratic manner. The concepts of science and democracy have much to offer the elementary school curriculum in both theory and practice, but a curriculum significantly affected by these concepts cannot be defined narrowly as the sum of the school's courses of study. A broader view is necessary.

DEFINITION OF THE ELEMENTARY SCHOOL CURRICULUM

The elementary school curriculum is, essentially, a process of living and learning within a democratic, problem-solving climate for children, each of whom has a unique developmental growth pattern. The curriculum process encompasses the total of all experiences children have under the guidance of the school. Since each child differs from every other child in a host of ways and looks out upon the world from his unique behavioral field, the curriculum is different for each child.

Elementary education is nonvocational and nonspecialized, and yet it seeks to develop the individual child optimally in terms of his unique interests and aptitudes. Since there is no concern in the better elementary schools for pressing individuals into a common mold, unique and different abilities emerge and are gradually differentiated during elementary education, inevitably setting the stage for future specialization and career orientation. The democratic elementary school, then, is prepared to take each child where it finds him and to help him become everything which his heredity and the opportunities of his environment permit him to become. It utilizes subject matter, teacher skills and personality, community resources, and innumerable other factors in a planned design which professional teachers and administrators understand.

A DEMOCRATIC, PROBLEM-SOLVING DESIGN

What is involved in a democratic, problem-solving design for curriculum development?

1. *Values*: The purposes of elementary education in a democracy. These values are discussed in Chapter 1.
2. *Social and emotional climate*: The social and emotional factors, including teacher personality, affecting the school and classroom atmosphere. This climate is discussed in Chapter 2.
3. *Rationale of the classroom*: The organization and processes of group living and learning and the organization of subject matter around significant problems. This rationale is discussed in Chapter 3.
4. *Individualization*: How the process respects the dignity and worth of each individual and provides for optimum development of each pupil. Individual differences are discussed in Chapter 4.
5. *Continuity*: How the design provides for curriculum continuity for both the individual and the group. Continuity is discussed in Chapter 5.
6. *Cooperative- and self-evaluation*: The place and purpose of evaluation in the democratic, problem-solving process including the critical process of reporting progress. Evaluation is discussed in Chapter 6.

CHAPTER 1

Purposes of Elementary Education in a Democracy

IMMATURE CONCEPTS OF DEMOCRACY

Great men through the ages have conveyed to us a conception of democracy which few Americans fully understand. Like Christianity, democracy has suffered through immature interpretation and institutionalism. Many of the great expressions of democracy are in familiar and revered documents: the Declaration of Independence, the Constitution of the United States, the Gettysburg Address, the New Testament, the American's Creed—all speak to us of democracy in the most profound terms. Few Americans would risk taking a critical or opposing view of the contents of these great documents. Indeed, few Americans believe their own personal and social philosophies are in conflict with any part of these elemental statements of democracy. These words have become traditional with us. We take them for granted. We are committed to a blueprint of democracy. Thus far, however, our commitment has involved us more in words than in deeds. The supreme task of education is to develop a living democracy in the everyday behavior of the present generation.

American education has never really come to grips wholeheartedly with this supreme task. Teachers too often have conducted learning experiences about democracy at the verbal level. Few have successfully guided democratic experience: the deeds, the activities, the processes of living and working together in a demo-

cratically organized environment. The democratic process has been misunderstood by a great many well-meaning teachers and administrators. It has been confused with laissez faire, a doctrine which in education would permit both teachers and children to do as they pleased with a minimum of interference by school authorities or the public, a doctrine of almost unbridled freedom of action by the individual. This confusion led many school people to label all nonautocratic situations as democratic with the result that all excesses of misbehavior due to the relaxation of traditional controls were credited to democracy. Thus, democracy in education received many a "black eye" from these experiments in democracy by the misinterpretation of inexperienced teachers and administrators. Too often, such experiments are abandoned in favor of a return to the familiar autocratic controls and the authoritarian processes in learning, and not without encouragement from parents and the general public.

There is ample evidence that students emerging from American schools have received the impression that democracy is almost synonymous with laissez faire. A "Town Meeting of the Air" essay contest reported by Eichelberger¹ and involving more than 6000 students indicated that American schools appear to interpret freedom in a democracy as "do-what-you-like." Most of the essays, written on the topic, "What Is Democracy?" emphasized the rights and privileges of citizens in a democracy and took little notice of the duties and obligations of people who are part of a democratic social system. The discipline of democracy, rule by due process of law, the need for interpersonal and intergroup compassion, the necessity of group intelligence and careful deliberation—none of these received much attention.

A committee of the Association for Childhood Education International² evaluated some aspects of social studies during the years 1956-1958 and discovered similar attitudes and understanding

¹ Rosa K. Eichelberger, "Learning Democracy in School," *World Week*, December 8, 1947.

² Marian Jenkins and Gertrude Wood, "Seeking Clues to Children's Feelings and Attitudes," *Childhood Education*, February, 1959, pp. 254-255.

among children in the intermediate grades. Children's responses to the question "What Is Democracy?" from eighty-eight classrooms were analyzed. Typical of the responses were the following:

BOY: To be loyal to the government and to withhold its laws.
GIRL: The right to vote.
BOY: A group of civilization people.
GIRL: Something that helps the world get along better.
BOY: I think that democracy means the freedom of rights.
GIRL: When the people of a country are free and have a government, are building up their country.
GIRL: Be sanitary, well dressed, and free.
BOY: The government.
GIRL: Where all the people have the same rights.

Undoubtedly many of these concepts held by 9- to 11-year-olds reflect the verbalizations of teachers in the usual social studies program. Also there is little evidence to suggest that basic changes in this type of approach to democracy in the curriculum are made in the more advanced education of the typical pupil attending American schools. It can be safely concluded, therefore, that American schools have not succeeded significantly in teaching both the meaning and the process of democracy. Yet, the skills, understandings, and attitudes of democracy can be acquired by experience and education. Should not elementary education, especially, be evaluated for the role it can play in the development of a new generation fully equipped to practice effective citizenship in a democracy? Should not the profession of teaching re-examine what is meant by the democratic way of life, how the guiding purposes of elementary education in a democracy reflect the interactive needs of the individual and of the society, and how these purposes may be translated into practices as a part of total curriculum design?

DEMOCRACY AS A TOTAL WAY OF LIFE

Like science, democracy is both a discipline and a freedom. Some have thought of freedom in terms of "Live and let live." De-

mocracy interprets freedom differently. The dignity and worth of the individual is respected in a democracy but not to the extent that the individual has unbridled freedom of action. The individual is helped to pursue happiness within kindly, but definite, limits of law and morality. He is allowed freedom to "live" in a democracy and develop in his unique way, but each person is his "brother's keeper." Democracy demands the performance of social obligation. A person is free with responsibility. Obligation and responsibility represent the discipline of democracy in interpersonal relations. Government adds law and the due process of law. Wherever democracy is operating successfully, then, it exemplifies the precept, "Live and *help* live." Its keynote as a way of life is the necessity for every mature human being to participate in the formation of the values which regulate men living together.

Contradictions in modern American culture contribute to the confusions of youth concerning democracy as a way of life. American culture is devoted to materialism. The stupendous development of industry and technology in the modern world has tended to submerge individuality. Thus its citizens show unrest, impatience, irritation, and hurry. They do not find support and contentment in the fact that they are sustaining and sustained members of a social whole.

An educational system devoted to methods of "putting subject matter over" rather than upon developing the critical, deliberative powers of the mind, thinks Thayer, trains the average citizen to identify education with indoctrination. He continues:

Much of our schooling and the docile methods of thinking it has fostered, contrast with the procedures which have made for success in life outside the school. Inside the school, facts have been taught as though what is true today will be true of necessity tomorrow. Moreover, the methods of solving problems employed are predominantly those of a syllogistic or geometrical character, in which a conclusion affecting a particular situation derives inevitably from authority in the form of an unchallenged major premise or a principle. Outside the school, on the other hand, facts, even principles, are more fickle and changeable and are subject to transformation with changing

circumstances. Who, for example, would venture to launch a business grounded on the facts of science as salted down some ten or fifteen years ago, without prior rechecking or verification?²

Not only are most American pupils engaged in repeating the approved and tested verbalisms of an authoritarian school curriculum but they are likewise organized into an autocratic system of social control in almost all activities of school life. These experiences shape American youth irrevocably for a role other than democratic.

"DO"-DEMOCRACY

The key to success in the development of democratic process in education is a mature understanding of how democratic deeds are performed by the individual and by the group. A democratic deed cannot be performed in isolation by an individual; it is the performance of the individual within an organized social environment. His deed, while expressing or satisfying a personal need, is out-going, contributes to general welfare, has social value, enhances the status of the individual and of the group. Contrary to an apparently popular belief, democratic action is well organized, behavior of group members is under definite controls, learning is not haphazard but guided by the problem-solving method, and inquiry is not anti-intellectual or shallow but increasingly deliberative, objective, and searching.

The words, the history, the traditions of democracy will remain in the curriculum of the modern school, but added to these must be the deeds of democracy developed in and through the everyday experiences of children. Having lived democracy in their formative years, our children as a maturer generation should perform greater democratic deeds than we can even imagine.

According to Faunce and Bossing,⁴ democratic living in the classroom should involve learning the skills of intelligent partici-

pation, learning how to set up "rules of the road" for the direction and control of behavior, and learning how the individual can fit uniquely but constructively into group endeavor. This classroom and school rationale helps to develop the democratic personality. The skill of individuals and groups to participate in the process of problem-solving toward social goals should become the prime characteristic of education in a democracy if men are to meet their problems and not merely follow directions. Ultimately, the success of a democratic society depends upon the development of a large number of democratic persons whose critical thinking and intelligent participation brings an end to unreasoning strife, resolves conflict by further inquiry and fuller understanding, and cultivates respect for the feelings and the rights of those who think differently.

ORDERLY CHANGE

The expected outcome of group deliberation and problem-solving is orderly change. Change that is made by the group for the good of the group and the individuals who are members of the group is an attempt at social improvement. If the change meets a problem satisfactorily, the improvement may be obvious. The improvement may be only temporary and require further change in a continuing search for a better answer. In the examination of new ideas, pupils and teachers discover many new facts and meanings, some of which lead to other new ideas. As a new idea is applied to action of some sort or other, the student discovers still further meanings. Such meanings require additional changes not visualized before. Even the democratic way of life itself is subject to change through use. Participants get a more mature concept of it in the process of experience. Democracy is experimental, given to adventure, and it constantly evaluates its values and processes and expresses them in terms of the majority judgment of society.

The values of a democratic society are cumulative, that is, they have emerged out of the remote past. Through the rigorous test-

ing of time and human experience, some values wither and die but others persist generation after generation. The great persistent values of human history constitute the hard core of values for democracy. Democracy is basically evolutionary, not revolutionary, in character. Its values will change and mature with more human experience, but such change will be slow and deliberate, careful and searching. Man cannot go beyond his experience or make specific preparation for an unknown tomorrow. He can only live intelligently in the present, using the lessons of the past, relying on his powers of creative thinking. As John Dewey says: "We always live at the time we live and not at some other time, and only by extracting at each present time the full meaning of each present experience are we prepared for doing the same thing in the future. This is the only preparation which in the long run amounts to anything."⁵

Democracy cannot be expected to rise above the imperfections and immaturities of the people whose behaviors express it. Because of these shortcomings, it will always be vulnerable to the attacks of those who try to supplant it with perfectionistic, authoritarian schemes. And yet, in the long run, democracy holds the promise of greater security and happiness for all citizens. By its very process, it helps the human race to grow up and advance toward its highest ideals.

EQUALITY OF OPPORTUNITY

Traditionally, American public education is available to all, especially in the elementary school. This does not mean that school boards, administrators, or teachers believe that all pupils are created equal. Only a cursory glance at the school population will demonstrate that children are equal neither in endowments nor in opportunities. Equality of opportunity in American education means precisely two things: (1) each child should be developed to his own unique capacity, and (2) children, while they cannot be considered equal, *must be equally considered*.

⁵ John Dewey, *Experience and Education*, New York, The Macmillan Co., 1938, p. 51.

There are some who believe that education of the masses is a great waste.⁶ This conception obviously is based on the assumption that the school has little to offer many students of average or mediocre ability. Probably it is true that the school organized entirely for high intellectual pursuits would be inappropriate for all but the intellectual elite.

Increasingly, the concept of education in a democratic society is that every citizen or potential citizen should receive a maximum education commensurate with his individual ability. This means that society practices human conservation of all. It attempts to make useful all human abilities for the good not only of the individuals, all of whom are considered worthy of dignity and respect, but also for the good of society itself. Because society is rich through division of labor, through making use of human differences and human uniquenesses, it has all to gain by educating each citizen to the full measure of his capacity. It literally takes "all kinds" to make a world. For a complex technological society with its emphasis upon intensive specialization, this axiom is more dramatically true. A great technology dramatizes the role of the intellectual genius, the atomic scientist, the mathematician, the engineer, more than the technician, the mechanic, the clerk, the paymaster, the druggist, the waitress, or the tailor; but all—and many more—are essential to the functioning of the social system. Even if it were not economic good sense to educate all individuals up to their potential, the dictates of a democratic society with its preference for humanistic values would demand an educational system which placed emphasis upon optimum development. A truly democratic education will attempt such a task.

PERSONAL DISTINCTION

The apparent dilemma that education for all will founder ultimately on the personal drives of people for social distinction⁷ can

⁶ F. T. Spaulding, "A Brief for the Selection of Secondary School Pupil," *The Harvard Teachers Record*, November, 1931, p. 106.

⁷ George Z. F. Bereday, "Selective Education Versus Education for All," *Teachers College Record*, LVIII (January, 1957), 198-206.

be met within the modern curriculum. If the curriculum is truly democratic, the desire of individuals to reach a measure of distinction will be channelled into activities which are significant and originally different and yet which do not place the individual apart from his fellows in harmful ways. A kindly acceptance of difference is implied by democracy. However, the drive for personal distinction cannot be allowed to take forms which restore to society the patterns of authoritarianism, of materialism, or of prejudice. The laws of a democratic society can help in this respect, but, ultimately, it is up to education to foster attitudes among the rising generation which will make unbearable any unnecessary poverty, exploitation of the weak, any idea that "might makes right," acts of partiality, or persecution of minorities. Education should encourage children to be different and unique in ways that harmonize with the goals of democratic living. It should help children constantly to accept and respect one another's differences while developing the central idea of democracy that regardless of what a man does he should be equally considered. Thus the man who fills a gasoline tank of an automobile is not better or inferior to the man who drives the automobile into the service station. Each has a part to play in a complex society. Each is important. One could not operate without the other. Who can really say that one is more important than the other?

THE PURPOSES OF ELEMENTARY EDUCATION

Increasingly, the concepts of maturity, personality, mental health, and behavior are being interpreted in terms of the enveloping climate of democracy for the child. When compared with authoritarian or *laissez faire* climates, democracy is seen as the best climate for maturing human nature. The factors which account for the quality of classroom climate are presented in the chapter following. It is important here to emphasize that the purposes which motivate curriculum development by professional teachers and administrators must be directly related to the requirements of a democratic climate and process. Specifically, the intimate connection between mental health and democratic behavior should

not be overlooked in a statement of purposes. It would, in fact, seem unprofitable to state the purposes of elementary education in terms other than the needs of the growing children of the American society and the needs of that society itself. These needs of the individual and of the society are interactive. The curriculum cannot, therefore, be child-centered or society-centered exclusively without departing from a design for democracy. What is good for the child is good for the society, and what society values so will the child. It would be of value to teachers if educational purposes were spelled out in terms of how to provide for individual and societal needs in a functional and harmonious way.⁸ Further, teachers will appreciate help in the development of classroom processes which anticipate, capitalize upon, and meet needs as an inherent feature of the curriculum.

The following material presents the purposes of elementary education in terms of individual and societal needs after an examination of all available research data and a re-appraisal of the current trends of cultural and social change in our democracy.

I. GROWTH IN EMOTIONAL SECURITY

Emotional Security Begins at Home

The quality of affection parents communicate to a child is more important than the possession of a fine home, providing a balanced diet, or maintenance of high standards of cleanliness. The child's emotional patterns are formed primarily through his associations in the family, especially in the parent-child relationships.⁹ The concept a person has of himself tends to reflect the attitudes which parents expressed to him in one way or another when he was a young child. Parents who are calm and who radiate confidence in the child tend to promote confidence and serenity in his feelings. On the other hand, a child will tend to feel inferior

⁸ Daniel A. Prescott, *The Child in the Educative Process*, New York, McGraw-Hill Book Co., 1957, Preface.

⁹ Percival M. Symonds, *The Dynamics of Parent-Child Relationships*, New York, Bureau of Publications, Teachers College, Columbia University, 1949, pp. 1-85.

and develop symptoms of emotional insecurity if parents give expression to excessive anxiety.

The development of emotional security is aided by a reasonably stable and consistent environment, including both the environment of the home and of the community. However, home relationships should provide for flexibility of child behavior within well-understood limits. These relationships should balance conformity and routine, on the one hand, with sufficient variety and freedom on the other. The child needs enough protection to gather his courage, but he also should be encouraged to venture into strange and unknown surroundings, to master various situations confronting him in the normal stream of his experiences, to develop, ultimately, a self-reliant courage. It is in the home that the child develops the tendency toward extreme egocentricity or an attitude of social responsibility and obligation. It is here that he begins to develop the habit of playing by the rules of the game or cheating on his associates. It is in the home that he is likely to develop basic feelings of security or of rejection.

Parental Overindulgence and Overprotection

The child who receives excessive gratification tends to be selfish, tends to act irresponsibly, and tends to remain infantile in behavior. He seldom finishes tasks and finds it difficult to adjust to monotony.

An excess of parental affection may be demonstrated by spending an undue amount of time with the child, including the time when the typical child would be out playing with other children. This tendency of a parent to overindulge a child is, in itself, a symptom of the parent's emotional maladjustment. Such a parent, by constantly entertaining the child, occupying his time by excessive reading, playing, taking him on trips, and otherwise trying to monopolize his attention, soon finds, perhaps with inner satisfaction, that the child cannot play normally with other children. The child returns this excessive attention with excessive petitions for money, toys, or special privileges. These the parent is powerless to deny. Further, the overindulgent parent tends to take sides with

the child even when he is clearly at fault and lavishes undue praise upon him. Genuine praise used in sincere moderation can have a beneficial effect on the child but false praise often is harmful. The result of this vicious cycle of overindulgence and excessive demands is an inability of both parent and child to meet the realities of social situations outside their own. The child fails to develop independence and confidence in his own abilities. His social behavior with other children is marked by crudity, egocentricity, and bad manners.

Overprotection, like overindulgence, can threaten the child's emotional security. Overprotective behavior is ordinarily a symptom of fears, anxieties, and worries of the parent. The child often is made unduly miserable by parental overemphasis on cleanliness and the fear of contracting contagious diseases. Overprotecting parents isolate the child from other children to such an extent that he fails to grow up socially, even though he is unnaturally polite and coöperative around other adults. With children he is retiring and lacking in initiative. Like the overindulged child who was allowed little time for normal play with peers, the overprotected child becomes overdependent and relatively helpless when thrown on his own resources in the give and take of peer interactions. He feels no responsibility for his actions, makes excessive demands on other children, shirks his own duties, finds excuses, and blames others for his shortcomings. He shies away from challenges and difficulties. He gives up easily. These behaviors do not disarm the other children; instead, he is wounded by their reactions and runs back into the arms of the overprotecting parent. Zolkos¹⁰ states that an overprotected child can seldom arrive at a realistic understanding of himself. He is particularly unable to meet new circumstances with self-confidence. Thus, he frequently has a reading difficulty; for in the reading process, where he must launch out alone and interpret in terms of his own experience, the element of necessary initiative is lacking and the necessary experience with the real world too limited.

¹⁰ Helena H. Zolkos, "What Research Says About Emotional Factors in Retardation in Reading," *Elementary School Journal*, May, 1951, p. 513.

Parental Inconsistency

Inconsistent parental behavior is an important cause of emotional insecurity. Such parental behavior toward the child is believed to contribute more toward delinquency tendencies than any other factor. It prevents the development of a consistent system of social values and guiding purposes for understanding the world in which the child lives. It is characteristic of a normal child to strive for balance and security in his experiences while trying to avoid unfavorable emotional experiences. He seeks understanding and acceptance rather than criticism and rejection from parents. He would be confused by parental inconsistency because of his feeling of dependence on them. He would find that he actually could not depend on them and his security would be shattered.

Parental Rejection

The child who feels he has been rejected by his parents is emotionally insecure. What the child feels and interprets as rejection is significant despite the attitudes and protestations of parents. The child who feels he is unwanted has little interest in learning to explore or construct. He gives up easily and becomes discouraged quickly. Some rejected children stop striving for independence and self-fulfillment. Out of the child's concept of his isolation, humiliation, and unwantedness emerge feelings of hostility, inferiority, and anxiety.

Parents are, too often, unaware of the feelings of rejection held by their children. Children who are left alone or who are isolated from their parents for long periods of time often develop feelings of rejection. The reasons for such absence of the parent may be entirely justifiable—to the parent. But, the child often cannot understand the *justification*. With social and cultural change, family relations fluctuate with changing circumstances of living. In recent years, both the father and the mother frequently are out of the home during many hours of the day, and often at the time when school children are at home. Thus, parents provide less emotional support and serve less often as counselors for their

children. This sometimes tends to make parents feel guilty, and their anxiety tends to create additional tensions in the home.

The Teacher and the Child's Emotional Security

Since emotional insecurity emerges out of family relationships, teachers need to understand it better as the source of many of the child's difficulties in school. If the teacher is to form a true partnership with the parent in aiding the growth and learning of the child, the professional knowledge of the teacher should be used tactfully but skillfully in teacher-parent interviews. While interpreting the behavior of the child to the parent, the teacher has an opportunity to indicate the kinds of parental behavior which could help the child overcome his difficulties. In this way, the professional knowledge and influence of the teacher can become a significant factor in improving child-rearing practices.

Although the basic patterns of security are formed in the pre-school years, the teacher, nevertheless, can become a positive factor in the continuing emotional development of the child within the classroom. Teachers can help the child develop satisfying social relationships with classmates and see that each child receives personal recognition as a part of the task of creating a favorable emotional climate in the classroom. Surely, the teacher can provide part of the recognition and affection for the child which the home and the community may have failed to provide. If a teacher deserves to be called a professional, there should be the assurance that in the teacher every child who enters the school has at least one friend.

Teachers can aid healthy emotional development by using the technique of resolving conflict through mutual understanding. Although the discussions and "talking out" which are precipitated by this technique may be time-consuming, the resulting emotional development can be desirable. Since the prejudices of children are symptoms of their own emotional insecurity and that of their parents, teachers will provide experiences in which children are encouraged to strive for higher standards of value in human relations by understanding cultural, racial, and religious differences.

children. This sometimes tends to make parents feel guilty, and their anxiety tends to create additional tensions in the home.

The Teacher and the Child's Emotional Security

Since emotional insecurity emerges out of family relationships, teachers need to understand it better as the source of many of the child's difficulties in school. If the teacher is to form a true partnership with the parent in aiding the growth and learning of the child, the professional knowledge of the teacher should be used tactfully but skillfully in teacher-parent interviews. While interpreting the behavior of the child to the parent, the teacher has an opportunity to indicate the kinds of parental behavior which could help the child overcome his difficulties. In this way, the professional knowledge and influence of the teacher can become a significant factor in improving child-rearing practices.

Although the basic patterns of security are formed in the pre-school years, the teacher, nevertheless, can become a positive factor in the continuing emotional development of the child within the classroom. Teachers can help the child develop satisfying social relationships with classmates and see that each child receives personal recognition as a part of the task of creating a favorable emotional climate in the classroom. Surely, the teacher can provide part of the recognition and affection for the child which the home and the community may have failed to provide. If a teacher deserves to be called a professional, there should be the assurance that in the teacher every child who enters the school has at least one friend.

Teachers can aid healthy emotional development by using the technique of resolving conflict through mutual understanding. Although the discussions and "talking out" which are precipitated by this technique may be time-consuming, the resulting emotional development can be desirable. Since the prejudices of children are symptoms of their own emotional insecurity and that of their parents, teachers will provide experiences in which children are encouraged to strive for higher standards of value in human relations by understanding cultural, racial, and religious differences.

The teacher promotes fair play among the children by helping them continuously evaluate sportsmanship as they participate in group games. The teacher promotes sharing, consideration for the feelings of others, and courtesy by placing children in situations in which practice in these matters is provided for all, together with continuous evaluation by the group of individual and group conduct.

Always, the teacher demonstrates to the child in varied, subtle ways that he is liked and respected. The teacher can be free with encouraging smiles and comments, show approval of sincere effort regardless of the results, and create opportunities for the child to volunteer to help others. The teacher points out the child's virtues when others speak of him derogatorily.

The teacher offers the emotionally insecure child responsible tasks when he is able to assume them. The teacher plays down incidents or sources of anxiety for the child, instead, communicating trust and confidence in him. The teacher shares in the activities which interest the child most, giving him the feeling his tasks are worth while. He forgives the accidents and mistakes which normally occur in the activities of emotionally insecure children, but which, if not smoothed over, might deepen the emotional ill health of the child. The teacher uses firm and objective procedures for necessary discipline and keeps "moralistic" and "wounded pride" attitudes out of his communication with the child.

Perhaps the most fruitful hope of all is that teachers and parents everywhere will form a sincere partnership for the exchange of information and understanding which will result in a better emotional climate for the child in both home and school.

II. A FEELING OF BELONGING TO HIS GROUP AND COMMUNITY

The Child Society

A rather well-organized child society operates within the larger adult society. It has its own characteristic codes, customs, activities, and goals. These are passed on from generation to generation like many of the adult society characteristics. Each class

group becomes a miniature society affecting significantly the learning of every individual within it. This society of the child is far more important to him than many adults realize.¹¹ Teachers should take advantage of the child society to teach democracy, to guide the development of democratic skills of participation and the development of democratic values.

Among his age-mates—his peers—the child must win belonging and a status role. In the home the child belonged just because he existed, but within the peer group the child earns his recognition and acceptance by contributing through his own activity something needed or desired by the group. By playing roles effectively and conforming to the codes of the child society, the individual gains a status position and a feeling of belonging.

An individual can hold an important position in the group and still not feel the warmth of friendships within the child society if the social structure is autocratic or adult-dominated. Ultimately, belonging depends upon the kind of person the individual becomes. In the home the child may be accepted because of who he is. In the democratic peer group he tends to be accepted for what he does. "What he does" consists of (1) his unique, interesting, and competent performance as an individual, (2) his ability to conform to group codes and customs, (3) his ability to "play the game," and (4) his demonstrable concern for others. When the child is accepted in the miniature democracy, his feeling of belonging is embodied in his realization that he is necessary or valuable to the group and that he can perform the tasks and the roles demanded of him by the group. In return for his loyalty and his contributions, the group accords him recognition, encourages his creative individuality by presenting him with additional opportunities to perform rewarding tasks, and shows active concern for his individual objectives.

The school-age child probably is more interested in the approval of his age-mates than in the approval of adults, including his parents. Teachers who hope to develop the democratic process in their classrooms should note this implication, especially as it indicates

¹¹ Prescott, *op. cit.*, pp. 274-276.

the kinds of motivation or rewards which appeal most to children. Peer pressure, while sometimes cruel, is far more effective in the long run than any moralistic exhortations of an adult regarding misbehavior or indolence.

The cruelty of the peer group often is less traumatic for the child than the cruelty of adults. He apparently can take much more from his fellows than he can from his teacher.

The Variability of Status

There can be little doubt that most children are more interested and concerned about their peer group status than they are with the subject matter which the typical teacher feels is the main concern of the classroom. Sometimes, the child may deliberately make a bad showing in traditional school tasks assigned by the teacher so that he may improve his status with certain other children in the group. Other children may be too preoccupied with friendship activities to work or study as expected. Also school can be a most unpleasant place for the child if he is friendless or rejected by the children in his group. The behavior of the child who lacks status and belonging tends to be characterized by fighting, vandalism, daydreaming, tattling, attention-seeking activities, or withdrawal. Loss of belonging tends to lower school achievement because the self-concept of the rejected or isolated child has been impaired. Subconsciously, he begins to feel that the low opinion other people have about him is true. When combined with a feeling of inadequacy, the child can be crushed and develop a sense of futility.

Hardly ever, nevertheless, is status a constant condition. The child has to struggle constantly to maintain himself in the approving eyes of his peer group. Roles change by mutual consent and by the iron rule of "taking turns" in the child society. The well-adjusted child seeks to make his contributions to the group in a variety of ways and often is grateful to teachers who help him develop his creative powers in still other directions. Perhaps the most sustaining contribution a child can make to group endeavor, thus sustaining belonging, is to think and solve the problems of

group concern effectively. The group tends to like a member who can "think straight," bring interesting and workable ideas into the discussion, or act as spokesman for the group.

The Isolated and Rejected Child

The teacher should constantly observe the child society in the classroom to determine how various children can be helped with their status problems. All children with special disabilities probably need to have their peer relations analyzed for ways the teacher can bring out hidden assets. Either the teacher may help the child develop a new and compensatory asset or call the attention of the group to an asset or way of contributing to group activity not yet recognized. Helping children to "get into the act" in small ways by kindly guidance often pays dividends in greater confidence and peer recognition. The habit of participation alone is desirable, and teachers assuredly can encourage children in those ways likely to succeed.

Special help by the teacher is often required in the case of the child who compensates for peer rejection by striving to please adults through academic performance. Equally in need of teacher assistance is the isolated child who is ignored or goes unnoticed by the group. Intensive study of both types is indicated. The teacher cannot help them form satisfying peer relationships until the cause of their isolation or rejection is known. When unfair competition for marks among pupils of unequal ability is removed from the instructional scene, the gifted child has a much better chance of developing wholesome and satisfying peer relationships and at the same time of pursuing his intellectual giftedness to the optimum. The teacher should help the gifted child to use his ability in ways that enhance group activity and appreciation.

The teacher should not encourage the fiction that all children can or should do the same amount of academic work. Instead, the teacher encourages among the children the concept of the individual and personal character of skill development as well as academic pursuits. Tolerance of each other's differences in ability will

follow the use of these unique abilities in complex group problem-solving activities which demonstrate clearly to the children that each person's work is important to the total enterprise. An insight into the necessity as well as the advantage of division of labor in a democratic society—child and adult—will help children view difference with interest rather than scorn.

The Teacher and the Child's Belongingness

The teacher cannot dictate a status role for the child. He can only create situations more favorable to winning status. Class organization and process, however, contribute strongly to such favorable situations when the design is democratic and the emotional climate encourages everyone to act in terms of his best behavior. Children appreciate the security and consistency of definite organization and process when they can be relatively free within it to make their own responses. The values of democracy will be expressed in a classroom so organized and guided. These values will tend to condition the behavior of the group and of the individuals who value the group's approval over a period of time. Unquestionably, the influence a teacher has with a peer society will not yield many tangible results immediately. Democracy takes more time to develop than other systems, but the results are well worth the time and effort expended.

The physical make-up of the classroom aids the development of the democratic peer society and thus affects ultimately the status-seeking behavior of pupils. When children can talk to one another without undue penalty, deliberate face to face, feel free to move about within reason, form groups for specific tasks involving weather, and the like, the teacher has already created a more favorable setting and climate for children to make significant contributions to group endeavor and win them recognition and acceptance.

By providing an opportunity for all the children to play a satisfying role in group activities, the teacher helps the group achieve solidarity. The feeling of solidarity which may include the teacher

as a participating—not dominating—member emerges out of common purposes, common understandings, common experiences, and common achievements. Communication among members of the group is enhanced because they have something in common to talk or write about. Whenever the teacher or the group can open new channels or opportunities for communication among group members, new opportunities for achieving belonging will appear.

The sociogram may be useful in diagnosing the status difficulties of children although there is no substitute for continuous direct observation of the group in action. Case studies, of course, are indicated for the isolated and rejected child. The teacher can give careful attention to organizing work groups involving status-starved children in ways that will help them each perform to best advantage.

III. ACHIEVEMENT IN HIS OWN POTENTIALITIES AND IN GROUP GOALS

Success for Some, Failure for Many

As a basis for mental health every person needs to have some feelings of success or achievement every day. Despite this basic requisite of mental health, the program of the traditional elementary school instead inherently causes failure for many children every day. Nor are there "built-in" success experiences for children who cannot for one reason or another meet the graded standards in the lock step system. When unlike children are measured by the comparative marking system all too common in American schools, the system inevitably condemns many children to daily feelings of failure. This monotonous failure would perhaps not be so damaging to mental health if the fact were not broadcast for all to know—today and every day to come.

The whole concept of success and failure in school studies should be called into question; however, if a less able child were permitted to progress through the more formal academic skills at his own pace, he may not be seen as failing at all. If each step he

takes, no matter how small, is a successful step, it may be far more desirable both from the standpoint of the individual and of the society to label him a success. Psychologists confirm the old axiom that "Nothing succeeds like success."¹²

Teachers have to recognize, of course, that there are two kinds of failure for children. The one is failure imposed by adults or made inevitable by institutional practices. The other is failure due to the child's own miscalculations or choices. Sometimes the latter type of failure has beneficial effects for the child inasmuch as it helps him to face the reality of task situations and the consequences for his own progress. Sympathetic help from the teacher and the peer group can keep this type of failure from becoming detrimental to his mental health. Failure in situations where the child has no chance to succeed, however, can be definitely harmful.

Failure in elementary school tasks can be quite different, moreover, from that encountered in vocational or professional education. When a student fails to gain minimum competence in a field of career specialization, society must be firm about the logical consequences of such failure. Elementary education is general education and seeks to develop individuals optimally regardless of the levels of accomplishment attained. There can be no better preparation for high school, college, or life than achieving successfully each day everything that individual capacity and environmental resources permit. The purposes motivating evaluation of pupil performance in elementary education, then, are fundamentally different from those operating in higher levels of education, and especially in vocational education.

Every child, then, regardless of his ability, should be encouraged to move forward in his development with positive feelings of success. The nation can do no more in its educational system than help each pupil attain everything it is possible for him to achieve in terms of his potentialities and the goals of the group within which he operates as a status-seeking member. National compe-

¹² Herbert A. Carroll, *Mental Hygiene*, 2nd ed., New York, Prentice-Hall, Inc., 1931, pp. 139-140; H. Carl Witherington, *Educational Psychology*, rev. ed., Boston; Ginn & Co., 1932, p. 370.

tence in a race for survival can best be served by educating everyone to his optimum, not selecting a few for educational favors.

The Teacher and the Child's Achievement

It is not too much to ask that teachers help each child in the classroom to enjoy some feelings of success or achievement every day. This will not be as difficult as some have imagined if the teacher abandons much of the all too prevalent mass teaching of lessons to many or all of the children. Mass teaching often is ineffective, and the teacher can lose precious time which could be spent in the individual guidance of pupils who are working on their own level and in their own sphere of interest. To this picture of the role of the teacher in the classroom should be added a system of evaluation of learning which encourages pupils to set their own goals under guidance of the parent and the teacher and measures their success in terms of individual progress goals. The child then is constantly encouraged to accept tasks of increasing difficulty and complexity, and regardless of the particular level of achievement attained, he is evaluated and marked in terms of his own growth.

As has been said, the teacher also helps every child feel success by participating in the successful activities of the group. The teacher constantly provides experiences in which children feel the importance and the effectiveness of coöperative planning, of group decision, and of social action. Within this matrix, the teacher helps each child find a way to contribute to group endeavor through satisfaction of his own needs and interests. In such a group process, the teacher builds in children self-assurance, feelings of adequacy, and feelings of mastery over significant aspects of the environment.

IV. PHYSICAL SECURITY AND HEALTH

The School's Responsibility

The school obviously does not have primary responsibility for meeting the physical needs of the child. The basic responsibility

tests with the home. The recent history of education, however, indicates a definite trend in the direction of greater school involvement in those factors affecting physical security and health. The school probably is facing even greater involvement in the problems of the biological well-being of the child. The curriculum has already felt the impact. Health education and direct activities of a hygienic nature are already on the increase. Safety education seems to expand every year, requiring more curricular and cocurricular time and planning.

Changes in the culture and in home life no doubt account for the trend toward acceptance by the school of greater responsibility in the area of physical security. Sanitary and health standards have tended to rise everywhere. Safety regulations of all kinds seem on the increase.

The curriculum furnishes systematic instruction in the more approved ways of meeting sanitary, sex, and diet needs. The school enforces well-known regulations in the school about these needs. It gives the pupil information and advice about drugs, alcohol, and smoking. It furnishes concepts about the rhythm of rest and exercise and provides direct experience in both. It helps pupils, parents, and the general public to understand the relationship between good general health and success in school, to perceive that a health hazard centered in one person or in one place can be a threat to the health of the entire community, and that immunization programs are a must both from the standpoint of the individual and the society.

The Teacher and the Child's Physical Security and Health

The teacher can kindly insist that pupils practice good principles of health and safety in their activities of daily living. The classroom routine may be organized in such a way that the children assume responsibility for daily housekeeping routines, thus building habits conducive to cleanliness, sanitation, and safety. By encouraging self-discipline on the part of children, the teacher may prevent accidents or the panic which might accompany them. The

teaching program should be balanced between activity and relaxation for the bodily growth needs of the pupils. Matters of health and safety education should be organized in the problem-solving activities of the children. These make excellent problems for research.

The teacher is concerned also with the physical setting and what it means for the well-being of pupils. The physical setting for learning should be as comfortable and homelike as possible. Periodically, as a part of unit-culminating activities or an openhouse celebration, the teacher and pupils may plan and carry out activities such as informal games, parties, teas, skits, and pageants. In these activities there is opportunity to practice social skills like introductions, playing host, and other activities involving principles of courtesy or etiquette. The active and informal atmosphere thus generated should contribute to the physical as well as the emotional security of the children.

The physical environment surrounding the pupils should be checked continuously for recommended temperature, ventilation, and humidity. The teacher should check frequently the equipment that children use and encourage the children to report defective equipment or conditions that could interfere with instruction, cause damage, or result in injury. The teacher should keep a first aid kit in the classroom, instruct the children on its use in the case of an emergency, and review with children what they can do for those who are hurt in the absence of adults.

The teacher should always be alert to the possibility of illness among the children and contact parents on the desirability of action. An ill child does not learn effectively and in most cases should be released from school activities. The child with defective vision is handicapped in many ways, and the teacher is obligated to counsel parents about the matter, going beyond the home if necessary to secure proper correction. Probably the time is coming in American schools when children will not only be given systematic physical and medical examinations but also the treatment indicated. This trend is already underway. Since the health of the child is as much a societal as a family matter, education in a

democracy probably can justify the addition of medical services to the program of the school. At any rate, the school has a mounting responsibility for the physical security of the child by providing for the all-round development of the personality, providing for a healthful and safe environment, and providing for valuable instruction in ways the individual and the group can live better through intelligent use of the body and the physical environment.

V. BASIC SKILLS CONTRIBUTING TO EFFECTIVE LIVING

The Persistent Problem of Skill Development

One of the curious oddities of our day is that so many uninformed citizens are convinced that basic skills are not taught so well today as in the "good old days." Yet, there is overwhelming scientific evidence that the children of today perform better in these skills than their parents or their grandparents.¹³ It is important that teachers and administrators acquaint themselves with the research data on this question in order to reassure the public that such fears are groundless.

Many children learn to read, to write, to compute, to spell, and to speak effectively in today's schools. However, there are always exceptional cases—children who do not learn effectively. These cases remind teachers to strive for greater effectiveness in molding basic skills. Undoubtedly, two related factors have contributed to a more effective curriculum in skill development: (1) more development of skills within functional situations, and (2) increasing emphasis by teachers on development of understanding before the use of drill. Neither of these factors has been adopted widely enough in elementary schools, but a start has been made. Even more improvement in skills can be expected of the next generation of children, if curriculum design continues to make advances in these directions.

¹³ Louis E. Raths and Philip Rothman, "Then and Now," *NEA Journal*, XLI, No. 4 (April, 1952), 214; Ernest O. Melby, *American Education Under Fire*, New York, Anti-Defamation League of B'nai B'rith, 1951, pp. 27-28; William A. Brownell, "The Three R's in Today's Schools," *NEA Journal*, LI, No. 9 (September, 1952), 335-337.

Skills Emerge from Task Situations

Neither knowledge nor skills may be learned effectively unless they are put to functional use in the living present. Psychologists and educators alike have long held the view, based on careful research, that children learn better that which they put to use in their immediate experiences. Experiences which have a task or problem character real to the child seem to make learning relatively permanent and available for application to succeeding situations. Abandoned is the idea that the mind of the child is a storehouse to be filled with assorted facts, skills, and attitudes which it might be well for the child to know for use in the future. If knowledge can be "stored" at all, it probably must be caught up in the matrix of experiencing situations which the mind can more readily recall. If facts, concepts, and skills do not function within these situations, the possibility of extended recall is remote. The experiencing situations give *meaning* to what is being learned. After learning takes place, the *meaning* remains as the most important aspect of what is learned. Basic skills learned meaningfully are learned well and may afterwards be transferred to many other situations beyond the ones in which they were learned originally.

A skill or a concept has more meaning for a child when it helps him perform a task in which he is interested. He has a *need* for the new learning and the teacher can help him become aware of his need if he is not already aware. His understanding of the new skill or concept grows out of the situation within which the need arises. This point of view is in contrast to the naive assumption on the part of many uninformed critics of education who claim that children should be made to learn what is "good" for them. Children may, indeed, be forced to go through the motions of learning skills which have no meaning for them. Much of such learning does not "take," however, and much valuable instructional time is lost. Other critics insist that children should be made to endure hard and disagreeable tasks for the effect these will have

on character-building. Children do, in fact, learn to persevere through disagreeable learning sequences, and do so, without the crack of the teacher's whip, when the overall process challenges their interests and meets their needs. When the goals are attractive and well understood, then, hard work, persistence, and patience can be developed among children.

Skill development should be increasingly task-oriented. Skills essential for the child to learn should be essential to the tasks he has selected to perform. If the skills involved in his task are too simple or too complex, teacher guidance will help him select or assume other tasks within his present maturity and ability. Group problem-solving typically spawns many differentiated tasks. There is nearly always a task for every child regardless of his ability or experience. The child is enveloped in an experiencing situation requiring skill development. His social status is involved as he attempts to perform his role in the group. The teacher is a kindly resource and help in showing him short cuts and more efficient ways of performing activities. The other children have a stake in his development and join in helping him.

The three "R's" involve many skills desirable for all citizens to master. These vary from simple to complex. Their mastery varies with respect to abilities. The skills program necessarily must be differentiated in terms of the students. Yet, the three "R's" involve more than skills. Great damage has been done in education through the narrow attempts to teach arithmetic, for instance, as a set of skills alone. Drill methods aimed at direct command of rather automatic responses, largely through the device of repetition, obscure the underlying meaning. The learner too often develops slavish dependence upon repeating from memory the words which stand for facts. The three "R's" truly depend, however, upon experience and the meanings which derive from understanding the use and functional working of their processes. Drill is necessary in skill development but only after understanding. Direct teaching of skills will sometimes be indicated, but teaching without the building of experience as soon as possible will be barren indeed.

The Teacher and the Child's Basic Skills

The teacher can stimulate and guide optimum skill development of each child by selecting with him individual progress goals and tasks which are in support of, or in addition to, the group problem-solving activities. These group-unit activities, of course, do not provide all the developmentally oriented materials or the systematic work required by the individual for a complete skills program. However, too many reckless statements by educators and lay people alike have unnecessarily discredited the part these group activities and experiences play in the development of basic skills. Probably most skill development should begin and find use in the experience of the group. What has been so often overlooked is that skills depend upon functional practice, and functional practice does not necessarily take place in the ordinary materials, like the workbook, which may be furnished the child by the teacher. Functional drill should follow understanding and insight. And this understanding very often emerges out of the problem-solving and experiencing of the group. The teacher should be careful to exploit these situations fully for their value in giving the individual pupil basis for further skill development as well as continuous functional practice in daily activities. The individual's systematic skill instruction should run parallel to the group experience, emerge from it, and feed back into it.

For example, the teacher will exploit the ever widening interests of the group or individual to emphasize the need for reading skill in order to satisfy curiosity or to find desired information. Problem-solving activities will point up the value to the learner of writing skills for recording information and communicating it to others. The teacher will relate the development of skill in oral communication to the daily, classroom, democratic process of discussion leadership and participation. Likewise, the teacher will exploit opportunities to develop skills of interviewing, dramatizing and the art of pageantry, and other artistic media to focus group-learning. The teacher will relate the development of arithmetic

skills to situations in the everyday activities of the child at home or at school which give meaning to his use of number; he will place appropriate emphasis on practice of the fundamental processes, development of the arithmetic vocabulary, and the translation of concrete experiences into abstract number symbols. The teacher will emphasize the development of spelling skills as a part of the unit language program as it, in turn, functions in the problem-solving activities of the group. The language program is differentiated in terms of individual readiness and by systematic study by each child of the words he has not spelled correctly while engaged in his writing activities. Finally, the teacher will lay stress on the development of work-study skills as basic to the democratic and problem-solving process in school or community. The work-study skills include discussion, research, reasoning, how-to-study, how-to-listen, scientific method, recording and classifying information, and organizing people and resources.

VI. DEVELOPMENT OF AESTHETIC AND MORAL VALUES

How Values Affect Mental Health and Learning

Both aesthetic and moral values are developed in social situations which lift the individual above his more primitive self. The discovery of some special or artistic talent is a social discovery and acts in turn to bring to the individual a new sense of hidden strength, a new feeling of confidence.²⁴ Goodness or morality also is identified in the social milieu. The recognition of moral acts serves to strengthen the individual's feeling of belonging. Experiences which help develop aesthetic and moral values should not, therefore, be left to accident but should become as much a part of the curriculum as arithmetic or reading. A great variety of experiences which are both quantitatively and qualitatively different must be provided, especially for the able, if every pupil is to

²⁴ Lucile Allard, "Guidance Through Teaching," *Educational Leadership*, X (March, 1953), 358.

develop optimally. Such experiences should include, according to Olson,¹⁵ richer offerings in the social and fine arts.

The values of democracy are learned in the experiences children have with democratic process. Scientific values are learned in activities controlled by the scientific method. Probably these important values are learned effectively in no other way. The climate and process which the teacher helps to create in the classroom, then, is far more important to value development than thousands of words which may be used in exhortation or preaching.

The Teacher and the Child's Values

Creating the climate and process of the classroom conducive to development of aesthetic and moral values is, again, a major responsibility of the teacher working co-operatively with the group. More specifically, the teacher can guide the development of aesthetic values in art activities and nature study. The pupil may grow to appreciate the wonders of nature by caring for plants, flowers, and shrubbery at school, observing and participating in efforts to conserve natural resources, and scientific exploration of the natural environment. The teacher will help children to appreciate, each in his own way, the fine arts by placing emphasis on form, rhythm, movement, and color in a variety of life situations and classroom activities. As in other curriculum areas, the teacher will exploit the "teachable moment" when interest is at its peak. In developing of proficiency and appreciation in the fine arts, the teacher will stress for all students, for example, an aural appreciation of music and a similar subjective appreciation of other art forms, e.g., painting, sculpture, architecture, and for the talented few will provide technical help. The teacher will encourage individual artistic talent so as to develop it to capacity for the good of both the individual and society. Always, the teacher will provide a great variety of opportunities for individual and group creative expression.

¹⁵ Willard C. Olson, "Redefining the Tasks of Education," *Educational Leadership*, IX (January, 1952), 220-221.

VII. CONTACT WITH OUR CULTURAL HERITAGE

How Children Should Contact Subject Matter

No responsible person connected with public education would deny the child a rich contact with subject matter. The question which apparently divides professional from nonprofessional opinion is *how* the learner will contact and use subject matter. Overstreet¹⁸ takes the position that a mind cannot mature which has not learned to think. *Information is necessary for the act of thinking*; however, the presence of information does not assure thinking. The way information is acquired affects significantly the development of the ability to think. Many schools appear to prize memorization of information extracted from the meaningful contexts of critical thinking which originally produced or utilized the information. Verbalizations, too, tend to highlight the learning experiences in such schools. Critical thinking and a maturing mind require an environment in which inquiry and exploration of interesting questions have become the organizing force. Information in great variety and depth may be used in this process, and *new information may be created in the process as well*. In schools emphasizing memorization of previously known data and verbalizations of the experiences and discoveries of others, children tend to develop the habit of uncritical acceptance, of dependence on others' opinions, and of dogmatism created by the pupils endlessly turning for approval to what the teacher and the textbook say. Every child needs help in making mature responses to life on his own level. This involves capitalizing upon or creating problem situations which offer opportunities for important learning for children on many differentiated levels and yet preserve the unity of the group.

The Teacher and the Child's Cultural Heritage

The teacher will most effectively help children make a rich contact with the accumulated cultural heritage by directing their atten-

¹⁸ H. A. Overstreet, *The Mature Mind*, New York, W. W. Norton & Co., 1949, pp. 246-259.

tion to "burning questions" which lead them to find answers in that culture. Focusing the attention of pupils on the great social and economic problems of the present will most clearly manifest the cutting edge of our culture and the rich heritage which lies behind it. All problems have roots in the past as well as manifestations in the present, and teachers can help learners develop the habit of historical inquiry. Learners can be helped to trace significant trends and spotlight critical events in history and thus select pertinent data for their purpose. As these young explorers of the cultural heritage employ constantly this technique in their problem-solving activities, they will, in the long run, become more familiar with the significant milestones of history rather than by following the prevailing practice of systematic chronological progression of events.

The teacher will present opportunities for the pursuit of highly differentiated interests among pupils in contacting the social, material, moral and artistic contributions of the past. For example, for those interested and capable of developing deeper understanding and appreciation, the pursuit of great literature and drama might be encouraged. However, attempting to press all learners into such a mold is a sad show of some teachers' failure to grasp the differences and capabilities of children.

The teacher recognizes the value of children exploring all aspects of life in their own communities for evidence of the cultural heritage. National and religious holidays furnish opportunities to develop appreciation and understanding of the highlights of our history and the great ideas which emerged from them. As has been said, concepts and illustrations from the past about democracy will not suffice, however, in developing the skills and attitudes of democratic action. The study of the heritage will have to be supplemented with pupil experiences in the present by using democratic process to deliberate and make decisions.

By employing a galaxy of communication activities in the process of learning, abundant cultural matter will result. Functional learning of data and its use in the communication activities of today's children will make the cultural heritage and the subject matter

representing it come alive in the schools as never before. What better contact with the aesthetic and moral heritage can there be than through creative activities in original writing, historical pageantry, dramatization, drawing and painting, construction of architectural models, sculpture, original writing, recreational reading, musical appreciation activities or participation in the expression of great music?

VIII. EXPERIENCES DEMONSTRATING HOW SCIENCE AND DEMOCRACY PROMOTE CONSTRUCTIVE CHANGE

The Need for Orderly Change

The child has a need for new experiences which expand his world. Creative and thoughtful adults constantly attempt to improve the conditions under which they live through purposeful change. A democratic society fosters orderly change in the direction of the ideals and goals of that society. The process for orderly and constructive change is inherent in the system. Group deliberation and problem-solving result in a plan for the change desired. Since democratic maturity is an ideal which may never be reached, social change toward the realization of intermediate goals is a necessary and desirable outcome of democratic living. The schools can be of great help in the strivings for democratic maturity if curriculum process makes functional use of the method of democracy. The solving of, or attempts to solve, school and community problems through inquiry, discussion, and group action should be the experience of every pupil. Teachers can show continuously how change is the expected outcome of problem-solving and of group action. Changes made by the group for its welfare and for the welfare of its members are not to be feared such as those decreed by autocrats. As a society moves forward toward the attainment of its democratic ideals, it can try and try again. No particular change is permanent, necessarily. It may be but another step in what must be a continuous process of maturing for human society.

The school should help youth to overcome the defeatisms, the fatalisms, and the immaturities with which they may be confronted

in the present world quandary and help them to face the future with optimism and the knowledge that they actually can do much to shape the destiny of their nation and of the world. Most important of all, perhaps, our youth should get by contagion from their teachers a strong affirmative feeling toward the democratic ideal and the hope it holds for long-suffering humanity.

The Teacher and Change in a Democracy

The teacher will provide experiences for children involving direct and responsible participation in community processes and problems. The teacher will uphold the right of the individual to hold opinions which differ from those prevailing in the group but will present criteria for determining propaganda, bias, and intolerance. Acting as a guide and resource of the democratic process of the classroom, the teacher will turn controversy, where possible, into a scientific search for facts and solutions, and where not possible, into orderly and fair debate. The teacher will help children develop a "common sense" based on present facts rather than on the superstitions and folkways of past generations. The teacher will help children to develop an understanding of social progress based on progressive attainment of the ideals contained in the Constitution and other great documents and in the expressions of the greatest statesmen throughout history.

3

IX. EXPERIENCE IN THE PROBLEMS OF WORLD PEACE

Universal Peace or Universal Destruction?

In a world the principal antagonists of which possess intercontinental ballistic missiles with thermonuclear warheads (among other forces of cataclysmic destruction), war must become obsolete. Teachers have the solemn obligation to help American youth, and Americans generally, to understand that the human race is facing now, not some time in the remote future, the choice between universal peace and universal destruction. Further, teachers must help form the thinking and the behavior which society must achieve before the world can be a relatively safe place in which to live. Of

course, American teachers can influence directly only American citizens. They can hope that their influence upon the world can come through the leadership of their nation in world affairs.

To work creatively for universal and lasting peace, American youth will require skill in problem-solving. Also, the youth of today and tomorrow must *know* more than their fathers. So much must be known, youth cannot spend precious time in the relatively useless reverie of past glories. Their study of the past stems mainly from their study of the complex contemporary world. Their sense of the sweep of history is important to them primarily as it contributes to their understanding of the major current trends which are stretching into their future. Teachers must come to understand that subject matter *per se* may have no magic for a generation steeped in survival values. Much hallowed subject matter of the past can no more be prescribed by teachers of today than can ready-made solutions be handed to youth for the problems of their tomorrow. The unsolved problems of world coöperation should receive the continuous attention of children and youth. Their study of history, geography, economics, sociology, ethnology, etc., will be governed by their searching analyses of these problems.

The Teacher and Universal Peace

Teachers can help children and youth develop more affirmative attitudes toward other cultures and peoples and help them learn the practice as well as the theory of democracy. Teachers can encourage youth to examine how men have struggled to build up a system of law throughout history. Teachers can lead the exploration of learners into all the ages of the past to see how men have attempted to unite for collective security. By helping children understand the scientific basis for modern war and its increasing destructiveness with each technological advance, teachers can produce a generation convinced that war is no longer possible in the modern world. By helping children to analyze the evolution of federated political systems like America's, teachers can lead them to plan the next possible steps in achieving world coöperation.

Teachers can lead children to understand the different concepts of police power and war as an instrument of aggressive national policy. The world can work its way out of its present quandary only through careful thinking of people everywhere as well as those in high places. Every day it is clearer that education truly is in a race with disaster. Ultimately, teachers can aid the cause of permanent peace most effectively by guiding the development of maturing personalities—the only firm foundation for peace among men.

SUMMARY

The purposes of elementary education in a democracy must square with the values of a democratic society. Elementary education not only should interpret democracy as a total way of life for the rising generation but also it should advance the behaviors of democratic living to a higher level of maturity with each new generation.

The elementary school, then, places at least as much emphasis upon "do"-democracy as upon literature. Values should be learned in the context of democratic action. The expected outcome of problem-solving and democratic deliberation is constructive change. Children should experience this process in solving problems of their own concern.

Democratic action in the classroom provides opportunities for each child to express his own unique individuality. The drive toward personal distinction can be accommodated in a democratic society—whether in the classroom or in the larger community—through encouraging each person to contribute in his own way to group endeavor. Since the society is richer for giving expression to individual differences, each person is deemed worthy of social distinction.

The needs of the individual and the needs of the society are interactive. This is especially true in a democracy. It would be of value to teachers if educational purposes were spelled out in terms of how to provide for individual and societal needs in a functional and harmonious way. Further, teachers will appreciate help in the

development of classroom processes which anticipate, capitalize upon, and meet needs as an inherent feature of the curriculum. The following is a restatement of the purposes of elementary education in terms of individual and societal needs.

The elementary school should:

1. Help each child to grow in emotional security.
2. Provide experiences in democratic living which help each child to gain status or a feeling of belonging in his group and in his community.
3. Provide situations daily in which each child can enjoy feelings of success or achievement in terms of his own potentialities or of group goals.
4. Provide the facilities and relationships which foster the physical security and health of each child.
5. Provide for the purposeful and functional acquisition by the child of the tools and basic skills contributing to effective living in today's world.
6. Provide experiences rich in opportunities for the development of aesthetic and moral values.
7. Provide rich contacts with the accumulated cultural heritage in the solving of present problems and in the pursuit of leisure.
8. Provide experiences demonstrating how science and democracy promote constructive change through problem-solving and group deliberation.
9. Provide experiences which help children understand the problems of world coöperation and encourage them to work creatively for universal peace.

Selected Readings

Herrick, Virgil E., *et al.*, *The Elementary School*, Englewood Cliffs, N.J., Prentice-Hall, Inc., 1956, Chap. 4.

Hicks, Hanne J., *Administrative Leadership in the Elementary School*, New York, The Ronald Press Company, 1956, Chaps. 3 & 4.

Hurley, Beatrice Davis, *Curriculum for Elementary School Children*, New York, The Ronald Press Company, 1957, Chaps. 1 & 15.

42 Curriculum Development in the Elementary School

Kyte, George C., *The Elementary School Teacher at Work*, New York, Dryden Press, Inc., 1957, Chap. 1.

Mehl, Marie A., Mills, Hubert H., and Douglass, Harl R., *Teaching in the Elementary School*, 2nd ed., New York, The Ronald Press Company, 1958, Chaps. 2 & 21.

Olson, Willard C., *Child Development*, 2nd Ed., Boston, D. C. Heath & Co., 1959, Chaps. 1-2, 6-10.

Prescott, Daniel A., *The Child in the Educational Process*, New York, McGraw-Hill Book Co., 1957, Chaps. 1-3.

Shane, Harold G., and McSwain, E. T., *Evaluation and the Elementary Curriculum*, New York, Henry Holt & Co., 1958, Chaps. 2-4.

Warner, Ruby H., *The Child and His Elementary School World*, Englewood Cliffs, N.J., Prentice-Hall, Inc., 1957, Chap. 1.

CHAPTER 2

The Social and Emotional Climate for Learning

School children live and learn within a social and emotional climate which probably is *more significant to their ultimate success and happiness than the time-honored reading or arithmetic.* This climate can be captivating, kind, and stimulating to the child. It can also be cruel, frustrating, and traumatic.

The climate of the classroom cannot be isolated from the climate pervading the entire school. It has, however, immediate focus for the pupil, and a study of the factors which determine classroom climate often will demonstrate that the climate of any given classroom has *some unique elements.* Since social and emotional climate is an emergent of a total situation, a property of the field, it is difficult to analyze and difficult to reconstruct. Added to the difficulties of analysis is the fact that climate often is different for each child.

As the mature adult of the class group, the teacher often is considered the dominant force in the pattern of class interactions, and, therefore, the teacher and the feelings generated by the teacher come in for most attention in any consideration of classroom climate. It should not be assumed, however, that teacher personality alone is responsible for setting the tone of the classroom. The total *design of the curriculum and the almost infinite variety of pupil interactions, which are an expression of individual differences, also must be taken into account.*

From an observer's point of view, there appear to be four main factors which, viewed through functional analysis, account for the basic quality of a classroom's social and emotional climate: (1) the social organization, (2) the interacting personalities, (3) the co-operation-competition expectancy, and (4) the patterns of discipline and control. These factors are not mutually exclusive. Through each factor the observer can view a different side of a whole.

TYPES OF CLIMATES ENGENDERED BY SOCIAL ORGANIZATION

A class group is a miniature society. How it functions as a social unit is determined to a significant degree by its basic social organization. This planned and organized rationale for living and learning has an important effect on the social and emotional climate of the classroom. There are, fundamentally, three types of social organization, namely, autocratic, democratic, and laissez faire. These types may be recognized at any institutional level of society, and each society tends to reflect a type.

Each has its own characteristic effect on social climate and, in turn, personality. Hardly ever does one of these types operate in the pure form; however, the social climate which emerges from them often has the same psychological effect on the group and on the individual as the pure form.

Widely known are the research studies of Kurt Lewin¹ and his associates in creating experimental social climates to test their effects on children. School club activities of 10-year-old boys were led in turn by three different persons. One systematically developed an autocratic climate: policies were determined by the leader, steps in procedure were dictated one at a time, groups and tasks were organized by the leader and imposed upon the children, and criticism and rewards were personal. A second

¹ Kurt Lewin, Ronald Lippit, and R. K. White, "Patterns of Aggressive Behavior in Experimentally Created 'Social Climates,'" *Journal of Social Psychology*, 10 (May, 1939), 271-299. See also Kurt Lewin, "Experiments on Autocratic and Democratic Atmospheres," *The Social Frontier*, 4 (July, 1938), 316-319.

teacher systematically developed a *democratic climate*: policies were determined by group deliberation and decision; goals were discussed and decided upon, the leader insisting only that the various alternatives be considered; group organization and division of labor was determined through discussion; individuals were able to choose with whom they wished to work within limits imposed by the task situations; praise and criticism by the teacher were impersonal. A third teacher developed a *laissez faire climate*: complete freedom for the group or for the individuals to do as they wished was carefully maintained; no working policies developed; common goals were lacking; the leader did not participate in activities or interfere in any way; he seldom commented on work.

The three club groups were rotated among the three teachers. Careful observers kept objective stenographic and photographic records of proceedings.² The boys in the club groups were not informed of the experiment. Data were summarized after an experimental period of six weeks. Chief among the behaviors observed were the aggressive actions. In the autocratic group there was an average of thirty aggressions per club meeting. In the democratic group there were twenty, and in the *laissez faire* group there were thirty-eight. In the autocratic climate, the boys were relatively dull, apathetic, and disinterested. They disliked the leader but directed their hostility toward other clubmates. There was a sharp increase in the number of aggressive actions when the leader left the room. In the democratic climate, the boys liked their leader and were more friendly toward one another. Their actions were more spontaneous and creative, their deliberations more fact-minded. The group established policies of self-discipline and generally made discipline constructive. In the *laissez faire* climate, the boys liked their leader but appeared frustrated because he did not offer more help and direction in the organization of activities. These frustrations apparently resulted in the highest number of aggressive actions among the boys of any of the groups. There was little constructive effort in this group.

² Goodwin Watson, "What Are the Effects of a Democratic Atmosphere on Children," *Progressive Education*, 18 (May, 1940), 336-342.

pursuit of interesting problems. There was no trace of tension anywhere. There were no policemen stationed in or near the school. Students in this democratic school were genuinely busy, alert, and courteous even during the coming and going of visitors or school administrators. The students appeared to realize that the teachers existed to help them attain their own established goals through friendly, mature advice and help. Unlike the autocratic school, frustration and aggression were missing. Here democracy was operating through intelligent participation, by setting up rules by the group for the control of its own activities, and through the development of individual initiative and responsibility.

SOCIAL CLIMATES AND PERSONALITY

The studies of social climates and their effects on child behavior cited previously indicate that democratic social climate is best for the development of mental health and progress toward psychological maturity, whereas autocratic and laissez faire social climates tend to cultivate egocentricity and forms of aggression. Hostility and tension among members of the group emerge especially in the autocratic climate. The democratic group is characterized by more stable group structure, more objective behavior, more solid feeling of "we," more cooperative endeavor, more give-and-take of criticism without involving personal feelings, more constructive and sustained work, and more feeling for group property and group goals.

Apparently, then, the movements in education to develop favorable situations in classrooms for mental health and to develop democratic climates for learning situations are quite corresponding. Their convergence, at any rate, is inevitable and their ultimate purposes can be achieved only in the larger movement toward a curriculum designed to provide for a satisfying role for every child to play within the problem-solving and democratic process. There are countless variables in personality which may be conditioned by the environmental situation surrounding the individual. The personality does not develop in a vacuum. It emerges out of a heredity-environment field of factors and relationships. Apart from genetic

factors, it is profoundly influenced by home background, parental and sibling relationships, economic status, mores and folkways of the community, teacher-pupil relationships, and peer relationships. Some personalities are democratic, flexible, and change to meet changes in the environment. Other personalities are autocratic, rigid, meeting change with hostility. The latter, when found among teachers, often undermines efforts to build an effective curriculum design for the democratic climate which is most favorable for living and learning in school.

The Autocratic Personality

The autocratic personality almost invariably emerges from a pattern of deprivation or failure in normal social intercourse. This type of person develops feelings of insecurity among associates on his own level, and yet may be relatively secure in his relationships with inferiors and superiors if the status structure is well defined. At any rate, he is submissive and uncritical in his behavior with superiors and dominating in his behavior with inferiors, creating among them tensions, fears, and hostilities. An autocratic person may try to mask his inadequacies with sarcasm, ridicule, and displays of temper. He develops general feelings of hostility toward people. He is quick to see and to point out the sins of others. He is often pharisaic in matters of goodness and virtue. He is merciless to those who break rules. He is quite institutional with respect to moral and ethical values, identifying with a precise dogma in such matters. The autocratic personality reflects regressive attitudes. Change is avoided. The creative, the different, the imaginative are resisted or looked upon with the "sour grapes" defense mechanism. The "either-or" dichotomy is used frequently in the thinking of the authoritarian. The autocratic person aspires above all else to positions of power and authority. He will undergo great labor and privations to attain them. These positions are compensations for his inadequacies in social interaction. The autocratic personality obviously fails to pass the test of mental health.

The autocratic teacher cannot allow too many peer relationships and interactions during the learning process for fear of losing con-

trol. Pupils are rewarded for facing the front and attending to the teacher authority. *Verbalisms* too often become the chief learning mechanism because learners are expected to accept or believe much on the authority of others. Too, no matter what the teacher's personality may tend to be like outside of school, the authoritarian or autocratic school environment will shape that personality into an authoritarian framework. In an authoritarian curriculum design, the teacher will be inclined to weight subject matter exclusively rather than total pupil growth, mass techniques rather than individual guidance, and adult-imposed assignments rather than co-operative planning. In order to make the process work along approved lines, the teacher's personality, even if a benevolent one, will exhibit the attitudes and the behaviors of a despot.

The Democratic Personality

A democratic person observes that people are different, different from each other and different from himself. He does not condemn people because they are different; indeed, he is intrigued and attracted by the uniqueness of others. He cultivates a unique individuality of his own related to his particular endowments and opportunities. This individuality is a source of self-respect; he observes this quality in others and approves. He wants continuing freedom to develop this individuality within reason, and he supports all social activities which give strength to the feeling of personal dignity and self-respect of individuals.

Feeling that his self-realization could have no meaning unless he belonged to an enterprise larger than himself, the democratic person seeks company. He finds security in the love and affection of family and friends. He finds security in the policies and regulations of family and community life which he helps to formulate. He seeks a feeling of belonging by striving to become a worth-while member of groups. He seeks to do his work well, to develop a feeling of mastery in it, and not a feeling of mastery over men. Since he observes that civilized living conditions are made possible by human co-operation, he participates in determining the conditions in which he lives and encourages all men to do likewise.

tunities for all the pupils to demonstrate worthiness in some unique way. He must know his pupils more than an authoritarian teacher allows time to know them. A democratic teacher, as a deliberate policy, searches intensively for the way in which he can help a child earn acceptance. The authoritarian teacher could not afford the time even if he saw the need.

By acting in ways that are democratic in a design conducive to democratic action in the classroom, any teacher will become more democratic in personality. A teacher's personality or characteristic behavior may be significantly affected, then, by the design. However, even where there is a will, there often is *not* a way. Still, sometimes when the way is possible, the will is weak as in the case of the teacher who marshalls the children into a group activity and then retires to correct papers. Too many teachers and administrators apparently have thought that when children work in groups, they are supposed to be on their own. Democratic teaching involves the active presence of the teacher. There can scarcely be a democratic climate, design, or personality until the teacher organizes a process of group deliberation and problem-solving with himself as guide and leader. Not all leadership is taken by the teacher. The degree of democratic leadership changes in relation to the maturity of the children, but it is always a part of the learning process. Since many children who work in groups are still immature and egocentric, the cumulative result of isolating them from adult guidance would be on the whole undesirable from an educational point of view. The type of social organization present in such "on-their-own" groups would degenerate into anarchy. Democratic design, then, includes teacher leadership. The teacher is a resource person with respect to process as much as he is with respect to subject matter and sources of knowledge.

The Laissez Faire Personality

The laissez faire personality is indecisive and vacillating. The behavior of such a person appears motivated by an inconsistent or confused system of values. The personality may be characterized by the appearance of introversion or extroversion. If the former,

the lack of a disposition for leadership roles may reflect social failure experiences early in life which have blighted courage and prevented the development of social skills. If the latter, the inconsistent and vacillating behavior may be associated with profuse, excited verbal expression and physical activity which is a mask for deep feelings of inadequacy.

The laissez faire personality lacks general direction and sustained creativity in social activities. He may be proficient in the narrow sense but exhibits a weak will and easily yields to "band-wagon" influences. Basically, such a person lacks sincerity. He is unwilling to take chances on being wrong or in the minority. He gradually becomes defeatist and pessimistic, feeling that his and the group's efforts are essentially futile. He becomes a neurotic personality.

Democratic Climate and Preventive Mental Health

A great many children in school are, like many adults, the victims of personality maladjustment. These personality problems range from minor emotional difficulties, which nearly every person will experience sometime during the growing-up process, to neuroses and psychoses. Mental illness and the emotional disturbances which precede them do not just happen. They are caused—more often by environmental than by hereditary factors and most can, therefore, be prevented. Since the curriculum of the school plays such a decisive role in the development of the child, it must play a major role also in any program of preventive mental hygiene.

Preventive mental hygiene must become the primary responsibility, not of the guidance specialist, the psychiatrist, or the social worker, but of those who furnish leadership in the everyday and natural life situations surrounding the child. In these situations, especially in preschool experiences, dominant roles are played by parents and siblings. Teachers and peers assume great importance in these situations from the time the child enters school. The absence of early detection and aid by alert and sympathetic teachers and parents often means that the child progresses in the typical course of life situations from minor maladjustment to the point

where society considers him a problem, a bad risk in human relations, and even a dangerous person to himself or to others.

If the decisive factor in the mental hygiene process can be the professional knowledge of the teacher as applied in the curricular experiences which envelop the child, more attention should be directed toward the development of this professional knowledge in the pre-service and in-service education of teachers. Doubtless many teachers are ill-prepared to play this role in the mental hygiene program, but most would be willing and even eager to learn if given opportunities and a reasonable chance to carry out the curricular implications of such knowledge. In addition to the obvious behavior problems which teachers encounter daily in the classroom or on the playgrounds, they should recognize that some children who give no "trouble" are nonetheless disturbed and need special help. They should sense, too, that a great many problems connected with the ordinary learning process in academic studies result from poor mental health. Knowledge of the mental hygiene process should become to teachers a kind of key to most of the problems in curriculum development which they must meet daily. Increasingly, that knowledge should dictate choices of technique which contribute significantly to changes in the basic design of the curriculum itself.

Some maladjustments of children are directly attributable to the environmental conditions of school life when these reflect non-democratic social and emotional climates. Destructively unfair competitive situations (discussed in the following section) are a case in point, and, for another, standards set for subject matter mastery which are impossible for a large number of pupils to attain. Equally destructive of mental health is the school situation which fails to challenge an able child to live up to his potentialities. Surely, the school has a responsibility to help the shy, withdrawing type of child toward a rewarding social life with his peers. Then too, the school not only should remove the situations which encourage a child to cheat but also it should be able to deal constructively with a child who lies or steals. Whether an emotional problem is due to something within or without the school, therapy

may call for specific school procedures. Usually, the treatment of maladjustment calls for wholesome participation in group activities of the curricular program or in a desirable recreational program or in both. Very often, success in the normal learning tasks of the school awaits specific, effective therapy, but good school experiences are therapeutic in themselves. The purposes of elementary education in a democracy dictate that children with emotional problems be identified and helped not only because of the worth of the individual but also because of the effect these unhygienic behaviors have on the total emotional climate of the classroom, and, ultimately, of the larger society.

The administrative and instructional factors contributing to a wholesome social and emotional climate for the classroom should be directed toward both the prevention of emotional maladjustments and the continuous development of a higher level of psychological maturity and of social intelligence. Of course, there will always be emotional problems beyond the reach of the school, but in most cases the school has an important role to play in the total preventive and therapeutic mental hygiene program. Undeniably too, the school has the most responsible role to play in the progressive development of maturity and social intelligence. Serious thinkers question whether either of these roles can be implemented with the typical curriculum of today's schools, a curriculum that is still primarily authoritarian and whose process is primarily autocratic. Nor are these roles implemented effectively in the *laissez faire* school situations where it is assumed that children may be allowed to do as they please.

THE COOPERATION-COMPETITION EXPECTANCY

Mental Health Hazards in Competition

Whenever children of unequal ability, backgrounds, and interests are placed under pressure to meet rigid and graded standards of subject matter mastery, the pupils with below average ability will experience monotonous failure day after day and eventually develop feelings of inadequacy. In the same situation, the bright

pupils may be rewarded for a mediocre performance and develop unhealthy attitudes toward true scholarship, and, too, they may fail to develop feelings of success or adequacy. The traditional curriculum of the typical American school with its reliance on the cheap and easy technique of competition and of a comparative marking system condemns too many children to daily frustrations and feelings of inadequacy which leave a mark on mental health. Given years of this type of crippling influence in the life of the typical American child, the school becomes a powerfully contributing factor to adult feelings of hostility or futility. Instead, the school should be a place where each day the child can enjoy some feelings of success, mastery, or adequacy in terms of his potentialities. This does not mean that the child can be cut off from all competition, nor that should he be. However, a democratic teacher acts to rescue the child from unfair competitive situations within which success is impossible and places him in largely coöperative situations where whatever competence he can muster will be utilized in group endeavors requiring unique roles.

Otto* presents an interesting example of unfair competition in which an 8-year-old boy is forced to wrestle with a typical 12-year-old. The younger boy does not have a chance to win but after each defeat he is scolded, humiliated, and even whipped. Once each week for several months the performance is repeated with the 8-year-old being forced to try again. This kind of competition was unfair and defeat inescapable for the 8-year-old. The educational values for both boys were negative. This imaginary wrestling match is presented as an analogy to actual school curriculum practices where the competition for school marks is equally unfair and destructive.

Classroom learning situations that place the members of a heterogeneous group in competition with each other are no less incongruous than the imaginary wrestling match between the 8- and the 12-year-old. Boys and girls with a corresponding difference in men-

* Henry J. Otto, "What Price Competition?" *The Texas Outlook*, February, 1954, pp. 8-10, 42.

tal age although of the same chronological age are found in any typical elementary school classroom. In fact, even greater differences in mental age are found commonly in the intermediate and upper elementary grades. The teacher who applies a comparative marking system to performances in such learning situations is no less cruel than the father who whips the 8-year-old after each defeat at the hands of the 12-year-old.

Competition is often lauded as the "American way." What is overlooked in this naïve view of competition is significant. No one objects to fair competition. But competition in school situations as described in the foregoing paragraph is grossly unfair. Competition in business, for example, is regulated by state and federal laws which ensure that it remain relatively fair, and if anyone feels that he cannot endure the strain of competition in one field, he can exchange it for another. Further, competition in the business world can be avoided in fields where the result would be unfavorable to the investor. This is a common practice in our free enterprise system. Yet, many children cannot avoid the unfavorable competitive situations forced upon them by the typical school. They are unwilling captives of the situation.

Unlimited competition may be a part of the American way of life, but this fact is deplored by the psychiatrist.⁵ The vocational side of life is largely competitive but the nonvocational side of life should be free from it. Those who feel the need for competition as well as those who fear it are all victims of personality maladjustment. By placing all on guard, excessive competition in school sets false standards. The symbol of victory too often becomes the substance of victory. In school, it is indeed a tragedy when learners have to be told when and how much they have learned! These false rewards should be supplanted by internal satisfactions of a job well done. The inner feeling of adequacy, of success, is not competitive in nature since it does not represent triumph over other people.

⁵ Henry A. Davidson, "Competition, the Cradle of Anxiety," *Education*, LXXVI (November, 1955), 162-166.

The Questionable Use of Competition for Motivation

Competition often is considered a necessary motivating force in the performance of school tasks. Isenberg⁶ reports that a number of careful research investigations on competition as a motivating device have been completed in recent years. As a result of these studies, serious questions have been raised concerning the value of competition as a motivating agent. Some children seem to profit by competition in specific tasks but the majority of children do not. Competition appears to leave undesirable side effects in the development of all children. It becomes a direct threat to many children who have no chance to win whether the possibility of winning is in arithmetic or volley ball. Competition for the honor roll or high marks is simply a form of bribe. It is a cheap and easy way to marshal children for learning. Further, many children have an immature fascination for competitive situations even though they are doomed to be hurt by them. The school should not seek to reinforce this primitive urge of children but should lead them to more mature attitudes of coöperation and competition with one's own record.

Ultimately, the child will be required by society to practice more coöperative than competitive behaviors as he grows to adulthood. Coöperative attitudes and procedures need to be stressed more and competition less if teachers are to develop a wholesome classroom climate conducive to social and emotional maturity. Even in schools which have made some effort toward curriculum reform in recent years, mass assignments, mass tests, and comparative marking systems often remain to undermine healthful mental attitudes and progress toward optimum development.

PATTERNS OF DISCIPLINE IN THE CLASSROOM*The Controls Within the Democratic Process*

One of the most intense concerns of teachers is the problem of classroom discipline and behavior control. There are no neat tricks,

⁶ Robert M. Isenberg, "Competition and Coöperation in Our Society," *The National Elementary Principal*, XXXVI, No. 7 (May, 1957), 22-26.

which a teacher may use in all situations, to achieve wholesome and responsible classroom discipline. An important basis of good classroom management and control is precisely the development of a truly democratic classroom climate and teaching personality. Within the context of democracy which in all the situations of classroom living becomes behavioral, the child may gradually develop responsibility, courtesy, sympathy, and self-reliance. These attitudes develop slowly. They must be nurtured carefully.

The teacher too often thinks of "getting control" of the classroom in an authoritarian and autocratic sense. A certain amount of respect for status leaders, like the teacher, must be encouraged, and sometimes demanded, if the school is to carry on an efficient learning program. What the inexperienced teacher sometimes fails to understand is that carefully guided democratic process in the classroom community inherently provides a basic pattern of discipline. And it is not the teacher who "gets control of the class." The class, with the teacher as a participating member and as an adult consultant, establishes its own standards of conduct and enforces, within limits, its own disciplinary measures.

The teacher who has perfectionistic attitudes toward child and adolescent behavior betrays an autocratic personality. Children must be allowed to try out and experiment with the democratic process and group-imposed discipline. As children mature in the attitudes and understandings required of responsible citizens in the community of the classroom, the teacher will, indeed, be rewarded for the fears and uncertainties of the earlier, sometimes hectic, learning period.

When pupils are engaged in constructive and challenging activities either in the group or by themselves, the opportunities for mischievous behavior decline. Keeping the instructional program moving, without unnecessary hiatus between activities, obviates mischievousness. Sometimes it might be better to go ahead with the spelling test by pronouncing the first word than to wait for the class to settle down. The activity with the demands of the situation elicits an intrinsic urge toward reasonable conformity. It is axiomatic that if demands for conformity are kept to a minimum, chil-

dren will more readily respond to special and emergency situations in a socially approved manner.

Discipline Problems

Discipline problems are caused. Teachers should understand that these problems are caused mainly by the environmental factors which envelop the child rather than by genetic factors. Taking notice of the fact that many undesirable attitudes and behaviors of children, as manifested both at home and at school, are erroneously attributed to heredity, Burton makes the following refutation:

1. A child is not born with a tendency to be troublesome at home or in school; nor with a tendency to adjust with docility to the requirements of home or school.
2. A child is not born with a tendency to be lazy in school; nor with a tendency to work persistently and continuously.
3. A child is not born with a tendency to be interested or uninterested in certain subjects.
4. A child is not born with a tendency to be morally or socially good or bad; nor with a tendency toward either good or a bad character.
5. A child is not born with a tendency toward a particular life occupation.⁷

The child is bombarded with constellations of stimuli by his various environments in and out of school. These provide an enormous number of opportunities for learning in the normal course of living and growing. For most children these opportunities are translated into countless worth-while learnings.⁸ For some children difficulties appear in relationships; that is, frustrations interrupting the normal continuity of growth result in withdrawal or aggression, either of which may appear to the teacher to present discipline problems.

⁷ William H. Burton, *The Guidance of Learning Activities*, 2nd ed., New York, Appleton-Century-Crofts, Inc., 1932, p. 173.

⁸ Dale B. Harris, "Pied Pipers of Pedagogy," *The Phi Delta Kappan*, October, 1936, pp. 14-15; Ray Montgomery, "John Dewey and Continuity of Growth," *The Phi Delta Kappan*, March, 1933, pp. 216-217.

The democratic teacher develops a professional attitude toward discipline in the classroom. Helping the child depends upon his ability to avoid feelings of personal hurt and a reaction of agitation, even though the arrow may be physically real. He is interested in helping to maintain law and order in the community of the classroom, but he looks behind the behavior symptoms to seek out the causes of unsocial behavior. With the help of counselors or social workers he plans the action he and the class should take in helping individuals resolve their adjustment problems. Since the democratic process includes law-making, he encourages children to help formulate the rules by which they live and learn. He encourages pupils to develop an impartial attitude toward law-breaking and to develop the will to make law rule the classroom. He is impartial in his own behavior toward the children where questions of law are involved. Yet, he sets the example of obedience and mercy in fulfilling the law. He constantly seeks to keep each child on the road to social maturity and mental health. He knows he will defeat his purposes by unduly interfering with normal peer pressures, by encouraging a child to be overly dependent upon him, or by withholding sympathy when a child faces a critical moment in human relations.

SUMMARY

Classroom climate emerges mainly from the complex of social organization, teacher and pupil personalities, the competition-co-operation expectancy, and the patterns of class discipline and control. Of these principal factors, the organization and function of the social situation, whether autocratic, democratic, or laissez faire, appears basic to curriculum development. The other three principal factors tend to relate themselves functionally to the pattern of social organization. In the chapter following are presented the "how-to-do-it" techniques of the democratic, problem-solving process in the elementary school classroom. Operating within this democratic, problem-solving process are all four of the principal factors affecting classroom climate.

Selected Readings

Beck, Robert H., *et al.*, *Curriculum in the Modern Elementary School*, New York, Prentice-Hall, Inc., 1953, Chaps. 5 & 6.

Burton, William H., *The Guidance of Learning Activities*, New York, Appleton-Century-Crofts, Inc., 1952, Chaps. 8, 9, & 22.

Cutts, Norma E., and Moseley, Nicholas, "Four Schools of School Discipline—A Synthesis," *School and Society* 87, No. 2148 (February 28, 1959), 87.

Klausmeier, Herbert, *et al.*, *Teaching in the Elementary School*, New York, Harper & Bros. 1956, Chaps. 14 & 15.

Mehl, Marie A., *et al.*, *Teaching in Elementary School*, New York, The Ronald Press Company, 1958, Chaps. 8 & 15.

Miel, Alice, and Brogan, Peggy, *More Than Social Studies*, Englewood Cliffs, N.J., Prentice-Hall, Inc., 1957, Chaps. 1-3.

Reavis, William C., *et al.*, *Administering the Elementary School*, New York, Prentice-Hall, Inc., 1953, Chap. 4.

Schneideman, Rose, *Democratic Education in Practice*, New York, Harper & Bros., 1945, Chap. 16.

CHAPTER 3

Democratic Problem-Solving Process in the Classroom

WHAT IS THE DEMOCRATIC, PROBLEM-SOLVING PROCESS?

When children can help determine what they are to learn and the conditions under which they learn, the classroom situation approaches democracy. When the subject matter is organized around problems of interest to the learners, the classroom situation makes use of scientific methods.

Not all experiences in the elementary school can reflect the democratic, problem-solving process because of the immaturity of children. Children in the kindergarten-primary grades require more adult supervision than older children. Gradual induction into responsible participation should begin in the kindergarten with teachers carefully directing limited experiences. As children grow older and have more experience, teachers may organize situations which allow children progressively more independence and responsibility.

Democracy emphasizes freedom with responsibility within constitutional limits. "Constitutional limits" in the school situation include policies formulated by the school board, administration, and faculty. Also included are rules formulated by the society of the classroom.

Within these limits it is possible to develop a democratic, prob-

lem-solving process which can become a major force in the development of a democratic personality which can attain respect, dignity, and a feeling of belonging through participation in group living. This process makes the classroom a democratic community in miniature where freedom, responsibility, coöperation, and compassion *are lived* by its citizens. Since democratic living does not just happen and since children are immature, teachers need to develop skill in guiding democratic experiences. Again, teachers can develop this skill only through experience. They must develop the courage and the insight to experiment with democratic procedures and relationships.

The teacher will have no easy task in his efforts to build democratic process in the classroom. Not only have many Americans thought of it in terms only of parliamentary procedure or representative government but also many have developed a definite distrust of procedures which depart from the traditional authoritarian methods now prevalent in the typical school. Yet, democratic attitudes and behavior in daily living must become the focus of the elementary school if our society is to fulfill the destiny our greatest citizens have claimed for America. This destiny can be fulfilled only through planned experiences in democratic living and working together during the best period for learning. And that is the period of elementary education.

Democratic group deliberation and action should be structured by problem solving. As soon as groups fail to operate according to this pattern, they tend to degenerate into the behaviors of the mob or yield to authoritarian control. Within the limits of group structure, and ultimately for the benefit of the group, the free individual is encouraged to explore and investigate problems and extend his freedom to his intellectual and social (or "constitutional") limits. Individuals who are intellectually and morally dependent upon others limit their own freedom. The sense of freedom belongs to the adventurer, to the person who makes things happen.

Problem-solving activities while increasingly evident in American schools are still by no means universal. Problem-solving is antithetical to the authoritarian method which emphasizes presen-

tation techniques, spoon-feeding, and the memorization of previously discovered and tested data. Known facts are important to thinking and to problem-solving and there is a systematic search and review of these in scientific methods. However, previously known data is learned differently in the authoritarian curriculum and in practice has little transfer to creative problem-solving. In fact, the way in which facts must be learned in the authoritarian method enslaves the student to a dependent role as a learner. The rigor of scientific methods, on the other hand, is an effective way to release the creative energies of the learner and the group and nurture independent thinkers both for today and for tomorrow. It is the *method of inquiry* that has for the student true transfer value.

In a world of complex and changing social relationships and technology, today's children must learn to work for and with people and solve problems if they are to meet the known as well as the unknown challenges of their tomorrow. Life today requires scientific and democratic teamwork, not jungle-like competition. It requires a concert of the greatest variety of capacities and interests of the individuals. Social skills and attitudes, for one, are developed only within social behavior. And the ability to solve problems is developed only in the problem-solving process. The school can supply part of the context for this necessary dual development, and it must move quickly to implement its responsibility if democracy as a way of life is to survive and become the pattern for a better world.

LEVELS OF ORGANIZATION FOR DEMOCRATIC, PROBLEM-SOLVING PROCESS

The action implications of democracy and scientific methods may be viewed at the individual, small group, or whole class levels. When a teacher consults an individual about his learning and guides him in self-selection, self-direction, and self-evaluation, the teacher-pupil relationship is democratic and the action itself is intellectual inquiry. When several children take on a problem and cooperatively decide to divide the labor entailed, the social organi-

zation of the group is democratic. The methods of science and democracy are working successfully as the general rationale for classroom learning:

1. When a general and complex problem is selected for exploration by the class.
2. When the subproblems to be investigated and the subgroups of pupils to investigate them are decided upon or emerge from co-operative teacher-pupil planning.
3. When individuals contribute to the class problem by sharing their unique inquiry.

THE BEHAVIOR OF THE TEACHER

The behavior of the teacher is a critical factor in the development of democratic, problem-solving process. Democracy and science both deny the authority of dogma; therefore, the teacher cannot develop democracy by teaching dogma. The teacher must be careful to submit all prejudicial statements to inquiry by the children. The search for truth becomes an ever present goal, and the classroom must be kept free from propaganda, except labeled as propaganda, even that from the teacher. The attitude of the teacher should be that of abdicating from domination of the learning situation to an interactive relationship with it. A mature person is then in a position to guide the immature explorations of the learner. This means that the teacher does not spoon-feed, does not give answers, but assumes the position of a friendly and interested guide in the learning situation. He respects the opinions and conclusions of the learner even as he may ask the group to evaluate them. He acts constantly to place his own experience at the disposal of the learners, helping them improve their process of inquiry, suggesting further study before generalization, or pointing up additional alternatives. On a continuing basis, of course, the teacher helps individuals with the subject matter and skill development necessary for the tasks they have selected. If their selections appear too difficult in the skills and concepts involved, the teacher kindly assists the child in rechoosing appropriate learning tasks at his level. At all times, the teacher is mindful of the continuity pat-

tern of each child and helps all to grow developmentally in the skills and concepts of effective living.

The teacher's planning for the development of democracy in the classroom begins in learning to know each pupil, his unique needs, and his pattern of growth. This planning involves keeping tab on the child's interests, both persistent and transient, and anticipating and providing for the needs of the learning situation in terms of learning materials and resources.

THE PROBLEM PROJECT

The selection of a framework for learning is a co-operative responsibility of pupils and teacher. The framework suggested by the criteria of democracy and science is the problem project. It is a framework for both content and process, a framework for both skills and concepts, and a framework for the solution of a general problem through democratic action. Interpersonal relationships play a part. The way in which individual developmental needs are met also plays a part. Above all, the problem project must organize learners democratically and organize the subject matter around a problem to be solved. Of the latter, John Dewey said: "There cannot be a problem that is not a problem of *something*, nor a project that does not involve doing something in a way which demands inquiry into fresh fields of subject matter."¹

The problem project is more than the familiar unit of work and cannot be tagged as a subject matter unit, a process unit, an activity unit, etc. It may be all of these rolled into one, and more. It will furnish to learners ample opportunities for the development of new skills and concepts as well as improvement of those already learned. It will challenge learners to contact a rich and varied subject matter with meaning in terms of their individual differences. Finally, the problem project may be adapted simultaneously to the learning of the entire class, a smaller group, or an individual. It is a workable process for the entire class which provides for the "do"-democracy in the classroom and for the individualiza-

¹ John Dewey, *The Way Out of Educational Confusion*, Cambridge, Harvard University Press, 1931, p. 31.

tion of learning required by a typically heterogeneous group of children. But, like the single units, the problem project cannot do everything. Individual progress goals apart from the problem enterprise will be the continuing concern of the teacher. However, the weight of this type of teaching will be considerably lightened by the many opportunities provided by the problem-solving process to practice and develop individual learnings in the basic skills and subject matters.

STEPS IN PROCEDURE

The parallel between steps in problem-solving and the procedural sequence of the problem project may be seen below:

Steps in Problem-Solving

I. Recognition of the problem

II. Analysis of the problem

III. Collection of Data

IV. Review possible solutions and select tentative one

Steps in the Problem Project

I. Teacher capitalizes upon or builds awareness and interest in the problem

- A. Approach activities
- B. Additional interest-building activities to appeal to individual differences
- C. List present information, assumptions, and hypotheses held by the children

II. Teacher-pupil co-operative planning

- A. "What we want to find out" (list of questions)
- B. "What we want to do" (list of activities)

III. Development of the problem: the search for answers

- A. Divide labor (organization of committees)
- B. Read for information, scan, use table of contents, index, card catalog, and take notes
- C. Interview experts, take field trips, view films
- D. Set up experiments
- E. Develop new skills and concepts as needed

IV. Interpret information and set up verification techniques

V. Testing the tentative solution and reporting findings

V. Culmination: report of findings

- A. General report through programs, exhibits, etc.
- B. Understandings and facts (learned by pupils)
- C. Guides to evaluation

Sometimes the teacher is able to initiate a project by capitalizing upon the *interest* which may have been aroused among members of the class by an unusual event or circumstance. Typically this is not the case, however, and the teacher must set about stimulating interest deliberately. These interest-building activities are divided into three parts: the general approach, additional activities which further arouse and strengthen interest among all the children by their variety and appeal to individual differences, and listing of the children's prevailing information, assumptions, and hypotheses. Often a prolonged interest-building effort is not necessary.

A sure sign that interest has been developed among the children is the emergence of questions and animated discussion. This leads directly to the second task of the teacher, namely, to take inventory of what is already known and to list the questions and suggestions of the children in providing for *teacher-pupil planning*. This may be done by leading a discussion and by writing on one section of the blackboard, "What We Want to Find Out," and on another section, "What We Want to Do." These lists may be developed simultaneously as the discussion develops under the direction of the teacher. Once enough questions and suggested activities have been listed on the blackboard which seem to the teacher to furnish leads to the various significant aspects of the problem, the class is ready for the next step. If the lists are too incomplete, the teacher will realize that the discussion should be expanded. There is no reason why the teacher cannot, as a participating member of the group, suggest several questions and activities which he feels should be included in the lists on the blackboard. The teacher's questions or suggestions may set off an additional barrage of questions by pupils in an area not yet considered.

When the content has been organized around a problem and individuated into subproblems, the project enters a new stage—the

development of the problem. Division of labor for intensive work on the problem in terms of the sub-problems results in the organization of committees. Each committee should have wide individual differences among its membership, usually, because of the complexity and variety of its tasks. Each committee elects its officers, surveys its assignment of questions and activities, takes stock of resource materials under the guidance of the teacher, participates in cooperative planning, decides upon individual and group tasks, evaluates information, reads, computes, writes, and performs a host of learning activities in a self-directing way but with the knowledge and guidance of the teacher.

The next stage emerges gradually from the development stage. It consists of *interpretation and verification* of what is being learned. The teacher takes a more active part in the problem process here. Pupils need direction in determining whether information is reliable, whether information is complete, and whether answers are oversimplified. The teacher should stress multiple verification, open-mindedness and the will to test tentative conclusions. Each committee has an obligation to the class as a whole to report from time to time, as the situation requires, on the progress of the committee in performing its assignment. Thus, the entire class benefits from the work of all committees and the individuals within each. An almost continuous process of assimilation goes on by each pupil as he experiences the work of others as well as his own tasks in the form of definite reports, display of work-products, observation, reading, conversation, and other contacts he has with members of the class. Much drill work and systematic teaching emerge from the learning experiences of the development period. This makes drill much more attractive and understandable to the pupil because it emerges out of a need in his own experience.

The development and interpretation phases cover an extended period of several weeks. The last phase involves *culminating activities.* Here everything is pulled together. The activities chosen should provide ways of reporting of findings, and bring summary and climax to the project.

LOG OF A PROBLEM PROJECT

The steps which the teacher and pupils go through in developing a problem project may be illustrated in the outline of the teacher's log of a project "How We Look Out into the Universe" presented below. Although a detailed narrative description is lacking, the main steps of procedure in their order of occurrence are clearly discernible. Full narrative descriptions of class projects at each grade level are available in the chapters of Part II.

How We Look Out into the Universe

- I. Developing or capitalizing upon interest in a problem
 - A. Approach activities
 1. Showing of film: "Understanding Our Universe"
 2. Arranging classroom environment on space theme
 - a) bulletin boards
 - b) pictures on walls
 - c) table display
 - B. Further activities to build interest
 1. Discussion of current events; for example, launching of a new satellite or announcement of a coming eclipse
 2. Pupil discussion stimulated by seeing eclipse or shooting star
 3. Pupils bringing in materials from outside: rocket models, telescopes, or space books
 - C. Discussion of what pupils already know and believe about the universe.
 - II. Inventory of questions and suggested activities: Teacher-Pupil Planning
 - A. "What we want to find out"
 1. What is air?
 2. How far is the sun from us?
 3. Why is there night and day?
 4. What is a star?
 5. What is the difference between a star and a planet?
 6. What is an eclipse?
 7. Can man travel in outer space?
 8. What are clouds and what causes them?

46. What is an observatory?
47. Why does Saturn have rings?
48. How many planets are there? How far away from us?
49. Can man live on other stars and planets?
50. What is a planetarium?
51. Do other planets move?
52. What do planets look like?
53. Do all planets have moons?
54. What are meteors? Where do they come from?
55. What are comets? Where do they come from?

B. "What we want to do"

1. Visit an observatory.
2. Collect pictures.
3. Show shapes of constellations with paper stars or by tying strings around tacks.
4. Make a display on a bulletin board.
5. Demonstrate how *air takes up space*.
6. Save current event clippings pertaining to the stars, solar system, or artificial satellites.
7. Demonstrate the orbit patterns of planets through a model exhibit.
8. Make a miniature exhibit to show why we have seasons; to show eclipses of the sun and moon.
9. Demonstrate how night and day occur.
10. Demonstrate forces of gravity.
11. Demonstrate the revolution of the earth.
12. Demonstrate cloud formations.
13. Make graphs to show relative distances of planets.
14. Make a mural showing relative sizes of planets.
15. Draw pictures of what other planets and the moon might look like.
16. Show other films.

III. Development of the Problem

A. Classification

1. Committee on atmosphere and telescopes
2. Committee on the earth
3. Committee on the planets
4. Committee on the sun and moon
5. Committee on other members of the solar system

6. Committee on space travel and artificial satellites

B. Division of labor

1. Committee on atmosphere and telescopes

a) Questions 1, 8, 25, 26, 27, 29, 39, 40, 41, 46, 50

b) Activities 1, 5, 12, 16

2. Committee on the earth

a) Questions 2, 3, 6, 7, 9, 16, 19, 24, 31, 33, 35

b) Activities 2, 6, 7, 8, 9, 10, 11, 16

3. Committee on planets

a) Questions 5, 14, 17, 18, 42, 45, 47, 48, 49, 51, 52, 53

b) Activities 2, 4, 6, 7, 9, 11, 13, 14, 15, 16

4. Committee on the sun and moon

a) Questions 10, 22, 32, 36, 19, 20, 32, 34, 35, 36, 37, 38

b) Activities 2, 4, 6, 8, 15, 16

5. Committee on other members of the solar system

a) Questions 4, 11, 12, 13, 15, 21, 23, 28, 30, 43, 44, 54, 55

b) Activities 2, 3, 4, 6, 16

C. Class organization and division

1. The children with advice of the teacher select the committee on which they want to work.

2. The class begins work within the committees.

3. Committee chairmen and teacher act as steering committee.

D. Organization within the committees

1. Elect a chairman

2. Plan attack on problems

3. Set goals and deadlines

4. Determine resources available and how to find others

IV. Interpretation of Information and Verification techniques

A. While working on this project the pupils used skills in most subject matter areas. The subjects included:

1. Language Arts

a) Reading—to do research

b) Writing—to take notes, compose reports, and write original stories

c) Spelling—all new words

2. Arithmetic—to figure distances, sizes, and weights among solar family
3. Fine Arts—to make better charts, graphs, and murals
4. Science—to develop basic concepts of space, gravity, and speed
5. Social Studies—to better understand man's problems in the space age and continue to improve ways of working together in a democratic group

B. Results from Teacher Interpretation of Class Experiences

1. Appreciations and attitudes
 - a) This study demonstrates the minor role our earth plays in this vast universe
 - b) The children begin to think in terms of larger units rather than their immediate environment
 - c) The children develop open-mindedness, coöperation, responsibility, dependability, and a scientific attitude
 - d) The children understand the relatedness of all subject areas
2. Skills
 - a) The children increase their skills through diagramming, drawing, demonstrating, reporting, reading, and figuring
 - b) They develop the ability to work coöperatively and think scientifically
 - c) They develop the ability to use subject matter skills in problem-solving, each at his own level of achievement
3. Understandings (major)
 - a) Their concept of the universe is enlarged. The vastness of space, smallness of the earth, roles of the sun, moon, stars, planets, and other members of the universe are revealed to us through telescopes
 - b) Astronomy affects everyday environment. It will increase in importance in the future. Seasons, tides, eclipses, meteors, satellites and artificial satellites, night and day, all depend on factors beyond the earth.
 - c) Man's study of the solar system is historically old but only in recent years has it approached the status of a practical science.

V. Culmination: Reporting Findings

A. Reports and exhibits for parents

B. Understandings and facts learned by pupils. By the end of their study, the committee on planets, for example, had found answers to their questions such as the following:

1. What is the difference between a star and a planet?

A star is a heavenly body like our sun. Some stars are much larger than the sun. A planet is a heavenly body that shines by reflected sunlight and revolves about the sun. The path that a planet follows is called an orbit.

2. What planet is nearest the earth?

The planet that is nearest the earth is Venus and the distance between the two planets is 26 million miles.

3. What are the sizes of the planets?

Earth has a diameter of about 8,000 miles. The other planets range in size from 3,000 miles, diameter of Mercury, to 88,700 miles, diameter of Jupiter, which is eleven times that of the earth. The diameters of the planets according to size are as follows:

| | |
|---------|--------------|
| Mercury | 3,000 miles |
| Pluto | 3,550 miles |
| Mars | 4,300 miles |
| Venus | 7,600 miles |
| Earth | 8,000 miles |
| Uranus | 31,000 miles |
| Neptune | 32,900 miles |
| Saturn | 75,000 miles |
| Jupiter | 88,700 miles |

Planetoids number about 1,500 and are from a few to 500 miles in diameter. Planetoids are fragments of an exploded planet.

4. Where do planets come from?

Scientists say planets come from the sun. There is no one way that all will agree upon. Religionists say that God created them as part of His master plan for the universe.

5. Is there life on the planets?

Until this time there has been no evidence of life on the other planets. However, this does not mean that there is none. It simply means that if there is life it has not yet been discovered.

6. What are the names of the planets and how do they get them?

The planets have received their names from the various Greek gods and goddesses, who are found in the legends of the Greek people.

7. Why does Saturn have rings?

What appears to be a solid ring or rings around Saturn is not formed from a mass of solid or liquid matter at all, but is composed of swarms of dustlike meteors revolving about the planet. These particles are probably widely separated from each other, yet are close enough to appear solid from the distant earth.

8. How many planets are there? How far away from us?

There are nine planets in our solar system. They are, in order of their distances from the sun:

| | |
|---------|---------------------|
| Mercury | 36 million miles |
| Venus | 67 million miles |
| Earth | 93 million miles |
| Mars | 141 million miles |
| Jupiter | 483 million miles |
| Saturn | 886 million miles |
| Uranus | 1,783 million miles |
| Neptune | 2,793 million miles |
| Pluto | 3,670 million miles |

9. Can man live on other stars and planets?

We think that man cannot live on other stars or planets, but there is no actual proof. Perhaps this will be revealed to us some day.

10. Do all planets have moons?

Of the nine major planets in our solar system, six of them have secondary planets called satellites. A satellite is an attendant body revolving around a larger one, the way in which the moon revolves around our earth. Therefore the earth has one satellite—the moon. Mars and Neptune have two. Jupiter, the largest and usually the brightest planet, has twelve. Saturn, the second largest planet in our solar system, has nine. The largest of Saturn's satellites is Titan, and it is the largest satellite in our solar system. Uranus has five, and the three remaining planets, Mercury, Venus, and Pluto, have no known satellites.

11. Do planets move? How?

The planets do move. They do so by each one following its own path around our sun. The paths which they follow are called orbits, and an orbit is very much like a circle except that it is flattened a bit on two sides making it more the shape of an oval. The earth follows an orbit which takes one year from start to finish.

12. What do planets look like?

Each planet is different from the others. Some planets can be seen by the naked eye on certain days. Most of them have to be seen by telescopes and they look like the globe of the earth. Those planets that can be seen by the naked eye look like stars.

13. Do planets have night and day like the earth?

As the planets range in distance from the sun, the amount of light and heat are decreased. Pluto, being located at the greatest distance from the sun, receives very, very little light and heat and is therefore eternally dark and frigidly cold. The other planets experience a change from light to dark as they revolve, therefore having night and day.

C. Guides to Evaluation

1. Desirable in this type of project are teacher-composed objective tests. Since children like to demonstrate their acquisition of new facts in this project, a test of their factual information seems appropriate.
2. Some essay questions are used for unique individual learnings or for broader and more general answers.
3. Individual oral reports, told possibly in anecdotal form, are encouraged throughout the study to assess the effectiveness of learning, both social and scientific, upon the child.
4. Short self-evaluations by each child in either oral or written mode are presented by each child under the suggested heading: "What the Study of Astronomy Has Meant to Me."

D. Summary of Materials and Resources

1. Books

Alter, Dinsmore, *Pictorial Astronomy*, New York, Crowell, 1952.

Beauchamp, W. L., Mayfield, J. C., and West, Joe Y., *Everyday Problems in Science*, Chicago, Scott, Foresman & Co., 1946

Craig, G. C., *Science for the Elementary School Teacher*, Boston, Ginn & Co., 1958.

Ellison, M. A., *The Sun and Its Influence*, New York, The Macmillan Co., 1956.

Hennes, Alfvin, *On the Origin of the Solar System*, Oxford, Clarendon Press, 1954.

Kuiper, G. P., *The Atmosphere of the Earth and Planets*, Chicago, University of Chicago Press, 1952.

The Solar System, Chicago, University of Chicago Press, 1953.

Lemon, Harvey, *From Galileo to the Nuclear Age*, Chicago, University of Chicago Press, 1946.

Moore, P., *A Guide to the Planets*, New York, The Macmillan Co., 1954.

Skilling, W. T., and Richardson, R. S., *Sun, Moon, and Stars*, New York, McGraw-Hill Book Co., 1946.

White, A. T., *All About the Stars*, New York, Random House, 1954.

2. Community resources

- a) Carnegie Public Library
- b) Observatory or planetarium
- c) University Professors of Astronomy and their assistants

3. Audio-visual aids

- a) Films available for study of astronomy:

"How Many Stars," Institute of Science, color.

"Infinite Universe" Almanac Films, black and white, sound, 10 minutes.

"Solar Family," Encyclopedia Britannica, black and white, sound, 11 minutes.

"Solar System," Coronet, black and white, Color, sound, 10 minutes.

"Star Gazers," John Hix, black and white, sound, 10 minutes.

"Sun's Family," Young American Films, black and white, sound, 11 minutes.

"Trip to the Sky," black and white, sound, 11 minutes.

b) Film strips

"Comets and Meteors," Society for Visual Education

"Interesting Things About the Planets," Jam Handy

"The Solar System," Young American Films

"The Sun and Its Planets," Earth and the Universe Series, Society for Visual Education

"The Sun's Family," Jam Handy

"What's in the Sky?" Curriculum Film, Inc.

"Work of Astronomers and the Sky," Society for Visual Education

SUMMARY

Since the modern elementary school curriculum seeks to contribute significantly to the future of democracy, it should become more than a study *about* democracy. It must become *experience in demo-*

cratic living. Democratic, problem-solving process translates into action the concept that learning is a kind of quest, a voyage of discovery for children. This fundamentally American process helps children constantly to discover more mature ways of getting along with their peers, with adults, and with those who differ from them. Likewise, children constantly discover new facts (to them) in their various environments while solving individual or group problems. Children discover that both the social and physical worlds have structure, laws, and limits. They learn the consequences which may follow from failure to know or to act within these laws, structures, and limits (e.g., the consequences following the failure to live in harmony with the law of gravitation or the law against public vandalism). They discover that countless other people encounter many of the same persistent problems daily, both here and all over the globe. Further, they discover that many of these persistent problems have faced man in all ages of the past, and they discover the many, novel, and varied ways man had tried to solve these problems. Their voyage of discovery takes them everywhere in space and in time. Theirs is always the quest.

There are definite procedural steps in the democratic, problem-solving process which every teacher can learn. Whether building awareness or interest in a problem, leading coöperative planning, apportioning the division of labor, or helping learners to interpret their findings, the teacher can be a master of process.

The quests of children may require many learning resources not immediately available in the classroom. The teacher should be willing to help the children in their search for materials and data no matter where the quests take them in their legitimate pursuits. He constantly looks for sources of data useful to the children. He constantly helps children with the new concepts and skills required by their investigations. He realizes in advance that the resources for the learning of children in a democratic group process sometimes run the full gamut of the culture, of the natural environment, and of life. He knows his own role includes being a resource person of both data and process.

Selected Readings

Adams, Fay, *Educating America's Children*, 2nd ed., New York, The Ronald Press Company, 1954.

Chapter 4 is excellent for understanding the basic organization of the classroom. Chapter 5 discusses the unit of work.

Burton, William H., *The Guidance of Learning Activities*, 2nd ed., New York, Appleton-Century-Crofts, Inc., 1952.

Chapters 12, 13, and 14 are the best in the literature on unit teaching.

Hanna, Lavone A., Potter, Gladys L., and Hagaman, Neva, *Unit Teaching in the Elementary School*, New York, Rinehart & Co., 1955.

A complete volume on the values and procedures of unit teaching.

Michaelis, John U., *Social Studies for Children in a Democracy*, Englewood Cliffs, N.J., Prentice-Hall, Inc., 1956.

Chapter 5 has an effective discussion on the unit in the social studies. Two specimen units are to be found in the appendix.

CHAPTER 4

Curriculum Individualization

No two persons are born exactly alike, but each differs from each in natural endowments.

Plato, *The Republic*, Book II

INTRODUCTION

Breakfast was nearing an end when Mrs. Bartell poured more coffee into her husband's cup, reminding him to hurry. "I have a teacher's meeting this morning before school," she said. He was unusually jovial this morning, but she had not joined in his humor because of her own serious thoughts about the work ahead at Riverside School where she taught a Grade 4. The teachers were to discuss a playground incident at the meeting, but she was preoccupied with the varied incidents that seemed inevitably to occur the moment her pupils entered the classroom each morning. She had returned to teaching this fall after fifteen years as a housewife and mother. Things were certainly different after fifteen years!

Her 14-year-old son, Walter, now crooning in the shower, had very little need of her now, apparently. Presently, he would don his Levis and black leather jacket, mount his motorcycle, and ride away into a world far more comfortable in human relations for him now than the family circle, the world of his peer culture. Somehow, mothers could never enter this world. Her husband had more to lose, she thought, by her return to teaching, but he took it all good-naturedly and without complaint. He sensed that his wife needed this contact with children to cushion the shock of Walter's growing

up. He knew, too, that children needed teachers in their town, where good ones had been in short supply for many years.

Mrs. Bartell's serious mood this morning reflected her rediscovery that teaching was not easy. Children were so different. Each was a study in himself. There was slightly more than a year's difference in the chronological ages of her pupils but this was where the similarity ended. There was little Alice, so shy and withdrawing. Sad-eyed Christopher sat next to ever sparkling Betty. Eugene, big and uncouth, constantly interrupted her routine with unbridled physical activity. She guessed that his booming voice could be heard even in the principal's office far down the hall. David was intellectual, businesslike, dependable. Gordon probably was a genius but a constant behavior problem. He teamed up with Eugene to make trouble. Sarah was a little parrot: she was always ready with the desired answer to the teacher's leading questions; but she was a little pest, too, with her constant need for attention. Tom just sat in his seat, responding lethargically to directions and exhibiting little interest in events that swirled around him. Unkempt Wilfred had a chip on his shoulder. He came from an underprivileged part of the city. He was of average intelligence but severely retarded in reading and other communication skills.

Each child presented a different personality to the world. Mrs. Bartell knew there were many factors contributing to the building of these personalities beyond the influence of the school but she knew she had an obligation to find out how the school through her could help these children grow up better. Each was different but their uniquenesses could prove to be of value to themselves and to society if carefully guided. School had been in operation for over a month, and yet she still felt inadequately informed on each child. There was so much to learn about each. She had just completed a series of testing situations with the children which revealed many things about them and confirmed some of her earlier judgments. She had been quite unprepared for the wide range of intellectual differences as indicated by a standardized test of scholastic aptitude.

Gordon had a mental age of 13; Eugene had a mental age of 7; yet, they joined in creating bedlam in the classroom. David and Betty had a mental age of 12 while Tom registered a mental age of only 6 years. Here intellectual differences appeared to parallel personality differences as expected. David and Betty were quick to ap-

praise the world about them and to react with confidence. Tom reacted to his world slowly if at all. Sarah had an average intelligence for her age but demonstrated symptoms of emotional insecurity. What shocked Mrs. Bartell most was that Christopher indicated a mental age of eleven while on a standardized test of reading achievement he fell below the average grade for 9-year-olds. Here was a child who appeared to be producing far below his potential. She must study this apparent retardation further and help him if she could. Little Alice was a surprise, too. While shy and withdrawing, she accomplished in her daily work better than could have been expected from her score on the standardized test of scholastic aptitude. This sometimes happens, Mrs. Bartell recalled, when a child is a plodder, a hard worker.

The use of a profile rather than an IQ in expressing scores on the scholastic aptitude test helped Mrs. Bartell in her diagnosis of individual needs. She remembered that the IQ was an average of several factors and did not help her to understand why some children did relatively well in some areas and poorly in others. Betty, for instance, was at the top of her class in reading achievement as indicated by the standardized test in reading but she was only average as determined by a similar test in arithmetic achievement. When Mrs. Bartell had looked at her scholastic aptitude profile, she discovered that the scores which Betty made on the language and vocabulary sections of the test were significantly higher than those she made on those sections stressing quantitative relationships and numerical reasoning. From this analysis, Mrs. Bartell could see that Betty was performing as expected in both reading and arithmetic. Later, in conferences with her parents, this information would doubtless prove valuable in helping her parents to accept her lower achievement in arithmetic.

Gordon, the most intellectually mature pupil in the class, ranked third in the class in reading behind Betty and David although he was far ahead of either in arithmetic and science, subjects he handled with incredible ease. Mrs. Bartell felt that Gordon did little that really challenged him to his optimum potential. It was indeed difficult to keep him occupied with conventional school work even for short periods. He always seemed to have time for disruptive behavior. Except for Eugene, he played or worked little with the other boys. He was rather insubordinate in his relations with teachers and the principal, too. She often pondered his problem and hoped she could find

a way to challenge him to sustained effort in areas where he had such promising ability.

Perhaps these children in her room were too much in her thoughts both morning and evening as Mrs. Bartell constantly tried to solve the riddle of their development and her own role in it. As they finished their breakfast and drove to Riverside School where Mr. Bartell would leave her off on his trip down town, their conversation turned to Tom, Alice, David, or Christopher perhaps. They related the characteristics and experiences of these children to their own son, Walter, and to the experiences they had had with his schooling and development. They remembered how he had mystified them by sometimes wanting to be like other children, sometimes different from them. With hindsight, they realized why he had excelled in some things and failed in others.

He was generally disappointing in the traditional subjects of reading and language, seldom bringing home a report of high grades in any area of the curriculum. Yet, they remembered how he had suddenly become enthusiastic when a fifth grade teacher had introduced a unit on electricity. Walter asked permission to exceed his allowance for several weeks in order to buy dry cell batteries and copper wire. He and the neighbor boy later had set up quite a workshop in the basement to work successively on a telegraph set, a telephone set, a radio receiving set, and a radio transmitter. Only yesterday, Walter reported casually that the general science teacher at the high school had asked him to become a laboratory assistant. He had stayed up later than usual last night working on his algebra. In response to a question from his father, he had explained that, while he had never cared much for mathematics, he would have to bear down in that subject if he were to major in physics. Mr. Bartell, an insurance broker, had never taken an interest in mechanics or the laws of the physical world. Nothing in Mrs. Bartell's experience could account for the way in which the career interests of Walter were taking shape. The Bartells had learned long ago sometimes by bitter experience that they could not shape Walter in their own image. He was a unique individual. He had to live his own life. While they had given him an above average inheritance, much of what he was and what he was to become depended upon his own self-selection of experience.

These thoughts together with the discussions Mrs. Bartell had with her husband and her fellow teachers helped her to redefine her role

as a teacher. She saw this role more clearly each day. She was not teaching a class so much as she was teaching individual children each of whom learned in his own way, in his own time. Today, more so than fifteen years ago, teachers took account of individual differences. The key to teaching in terms of these differences seemed to be to *know* the child, know him better every day, and know him completely.

With reentry into teaching, Mrs. Bartell was reminded of many children she had had in her classes during her previous duty in the classroom. She remembered the manifold differences among them. She remembered the sometimes strange differences of potential and of developed abilities within the same child. She knew she had an obligation to look for, and to provide for, differences *within* as well as *among* children. This range of individual traits among children and within the same child had created perplexing problems for her and her pupils before and, now again, in the present. She knew from her previous education and experience that individual differences depend upon many factors. This morning she pondered: "Which are set by heredity? Which could be modified through education and living?"

DISCOVERING THE INDIVIDUAL LEARNER

Until the present century, undifferentiated mass teaching was the rule in America's schools. All pupils in a given grade were assumed to be fundamentally alike, and if a pupil's progress could not keep pace with his chronological age, he was deemed to be lazy and worthy of punishment. Previous teachers of the poor pupil often were blamed, in part, for his inability to learn. The way in which individuals differ in capacity, experience, and interests was almost unknown or ignored. The nonachieving pupil often was forced to wear a dunce cap, presumably to shame him into working with more industry, the assumption being that he could learn as well as the others if he had sufficient desire.

The era of intelligence testing in the 1920's and 1930's proved, however, that some children lacked the mental ability to succeed in some school tasks. Today individual differences are understood to include infinitely more than differences in intelligence. Developmental psychology has produced important data in recent years to

suggest that children mature at different rates in all aspects of growth.¹ Two children may grow to maturity with a similar level of ability and yet differ significantly at various stages of development. A given child, says Millard,² may be in a range of growth ages at any given time of more than seven years. A seventh-grade girl at twelve years of age may be an 8-year-old in language ability and yet a 15-year-old in height.

EACH CHILD IS UNIQUE AND LEARNS DIFFERENTLY

There are countless possible combinations of genes from a single pair of parents. The child's inherited characteristics may not resemble those of his parents so much as those of more remote ancestors. However, the constant union of differing family trees makes unlikely the recurrence of a distinct personality type in succeeding generations. Too often, the parents of mentally deficient children blame themselves unconsciously for the child's abnormality although each child literally is the "child of the race" rather than the product of his parents' characteristics. Likewise, the parents of extremely gifted children have no more scientific basis for pride than the former have a scientific basis for shame. Heredity is the basis of a great many differences among individuals.

The infinite differences in hereditary characteristics can be matched by differences resulting from environmental setting and experience. Even the experiences of siblings within the same family are very different. Position in the family, whether that of the oldest or the youngest, or somewhere between the two, makes a difference in the quality and interpretation of experience for children. Different illnesses, different friends, different observations, and an infinity of opportunities or missed opportunities irrevocably set the individual's experience apart. Favoritism, slights, rejections, or recognitions, real or imagined, by parents or other

¹ Elizabeth B. Hurlock, *Developmental Psychology*, 2nd ed., New York, McGraw-Hill Book Co., 1959, p. 11.

² Cecil V. Millard, *Child Growth and Development*, Boston, D. C. Heath & Co., 1951, p. 17.

adults in the home can alter experience drastically for the one sibling apart from the other. Heredity produces tendencies or potentials in individuals to become. The becoming depends very often upon environmental stimulation or opportunity. Even though a child may inherit a tendency toward a slight physique, good care and nourishing food may overcome this tendency. The inherited potential for intelligence seldom is fully developed by the individual. Maximum development of this intelligence would depend upon an ideal *interactive* process between the individual and his environment. This development is further complicated by the fact that the person, himself, must reach out to grasp opportunities present in the environmental field. Many of such opportunities are not explicit or immediately discernable but must be discovered by the individual's self-directing exploration.

A significant cause of many differences in personality may be differences in the extent to which both biological and psychological needs are met. An unmet emotional need, such as the need for a feeling of success, may lead to rather permanent resentments and aggressive behaviors. An unbalanced diet may lead to reduced vitality and ambition. Helping a child to feel success in many specific though minor ways may help him to break out of a shell of shyness and develop a new pattern of confidence toward school tasks and his social relationships.

Children not only are different, they become different to a greater degree with each passing day. School and life constantly widen differences which appear among preschool children. Most parents realize that there are different growth patterns among infants and young children. They accept as normal the fact that some children develop teeth earlier than other children of the same age. Similarly, they know that some children learn to speak before others of the same age group. Is it possible that some of these parents expect these differences to have settled into a standard pattern of growth when these children enter school? One thing appears certain, a great many parents expect a child to learn to read in Grade 1. Most children will not learn to read who have

not attained a mental age of about six and one-half years. Many children do not reach this mental age at all in Grade 1. Therefore, it is most unfortunate for parents or teachers to expect the same progress from all children. A random group of 6-year-old children in a typical first-grade class will exhibit a range of more than four years in mental age and a corresponding range in many such factors as reading readiness, number readiness, and vocabulary development. By the time this same group of children will have reached Grade 7, the range in all of these factors will have increased to about eight years.³

Just as it is impossible for a doctor to change the height or weight of a child arbitrarily to conform to a class average so is it impossible for a teacher to force every child to be ready at the same time for any particular task. Under a plan employing force, the teacher or parent either by urging, scolding, or offering extrinsic rewards attempts to make the child conform to some pre-conceived standard which in effect denies that differences among children exist. These methods of coercion fail, and are attended by unfortunate social and emotional repercussions. The only way the child can escape such an insult is to avoid the situation, to become aggressive, or to withdraw into a shell. In either event, the school is responsible when curriculum standards are involved for creating unnecessary mental health hazards for children. If the expectations of parents and teachers can be based upon the maturation of each child, one of the great problems of education will be solved.

Our modern society is vitally interested in stimulating each individual to his optimum development. Each child has a different potential; therefore the curriculum must be flexible enough to accommodate these differences.

In a democratic and capitalist society teachers may account for pupil differences by ascertaining how parents make a living and where the family lives in the community. Teachers are obligated

³ E. F. Lindquist (ed.) *Educational Measurement*, Washington, D.C., American Council on Education, 1951, pp. 9-14. See also Willard C. Olson, "Redefining the Tasks of Education," *Educational Leadership*, IX (January, 1952), 222.

to omit references to social or economic class in their work with children naturally; however, knowing the conditions within which the family works and lives is invaluable to educational diagnosis and guidance. To avoid embarrassment of the child, the teacher depends upon understanding of family economic conditions. Since certain neighborhoods breed characteristic behaviors in children, teachers must look beyond the classroom often to understand symptoms of misbehavior. The underprivileged child, the migrant child, the orphaned child, the minority group child—each needs to be given special help in terms of the socio-economic relationships within which he may be a prisoner at present.

Teachers must examine their own feelings about such children before they can be of maximum help. Prejudice of any kind is undemocratic and harmful to mental health. Teachers should analyze constantly the complex human relationships which exist in classrooms to better plan curricular experiences which should rescue the hapless individual who may be discriminated against by group prejudice or who may be impairing his own development by harboring prejudice. Since disparity in socio-economic backgrounds in any group of children permits immature behaviors, the teacher is concerned about the social attitudes of each child. Thus since each child is vulnerable to arrested development in intergroup relations, the total curriculum must be planned to cope with this persistent problem. One thread should run through such a curriculum: differences are to be valued, they should underwrite rather than deny status to the individual in a democratic society.

Children cannot go anywhere except from where they are. Schooling should more effectively help them go from where they are leading to more success and happiness. The competent teacher attempts better organization of processes, of time, and of resources to produce more effective learning. At the same time, school learning cannot depart from the stream-of-life activities without losing much of its effectiveness. Teachers are aware that living and learning occur simultaneously in the child, that it is fruitless to determine where the class is and from this meaningless consensus develop the instructional program. Each learner is unique and learns

in his own way.⁴ Each child matures in his own way and in his own time. To be sure, children have basic needs in common such as the feeling of belonging or the feeling of success, but the way in which these needs interact with the field surrounding the child is, again, unique. Since each child has his own pattern of growth and his own sequence of maturing, successful instruction must be paced to the individual pattern. A child is ready for learning when he has achieved maturation in the various physical and intellectual skills required and a background of experience which can give meaning to what is ahead.

Ordinarily, it is the total growth pattern of a child and not an isolated factor which makes a child ready for learning. Mental age alone does not indicate readiness nor does chronological age. Often a key factor in learning is emotional maturity. Emotional differences often are more pronounced among children than intellectual differences.⁵ Treating every child alike is especially unfortunate with respect to emotional needs. Different children should receive corresponding treatment from teachers and parents. Some, for example, need more than the ordinary amount of affection and attention. Others need positive encouragement. Often exceedingly active children should adopt socially acceptable restraints. Each child at each moment of life exhibits unique needs requiring attention from adults. Each child, therefore, should have his own unique curriculum, geared to his own pattern of maturation.

An experience is never quite the same to two persons even under a bombardment of the same external stimuli, because an individual engages in his continuity of activity conditioned by genetic factors in part. Also, what a person has been, or has experienced, conditions all subsequent experiencing. It is true that people do learn through their own experience.

Whether the child accepts ostensibly or wholeheartedly, rejects or ignores, will depend upon his purposes of the moment. These purposes reflect basic needs, interests, readiness. These

⁴ Association for Supervision and Curriculum Development, *Learning and the Teacher*, 1959 Yearbook, Washington, D.C., NEA, 1959, p. 54.

⁵ Hurlock, *op. cit.*, p. 16.

add up to his wanting to learn or not. These purposes have emerged from his experience and can be perceived only in terms of his pattern of continuity.

The process of education should bring together all of the forces of nature and of community life which, at his level of maturation and readiness, the child should contact and understand if he is to grow up without deprivation or frustration. Mass teaching is not indicated. Each child reaches out to discover the relationship of these forces in his own time. Social values, for instance, cannot be expected to mature in all children of a given group at one time. As with most things, values must be experienced. Values critical to the operations of the social group in which the child is a member become full of meaning, and there are almost as many levels of meaning as there are children in the group. Patience and forbearance are necessary. Values seldom change behavior so long as they remain in the realm of the merely verbal. Under intelligent guidance from the teacher, values should arise from experiences in the school and community life. The educational process is enriched experience and should continue, as well as interact, with the daily life of the community, and particularly with the newer experiences of the learners. By meeting present problems, the problems of tomorrow can be more easily dealt with—tomorrow.

LEARNING DEPENDS UPON INDIVIDUAL INTERESTS

When a child becomes aware of a person, an object, or a situation, and senses that it *concerns* him, he is an interested child.⁶

Since experience plays so important a role in the selection and organization of stimuli which bring interest into focus, interests are subject to great variability and change through learning. In turn, interests are so crucial to the initiation of learning activities, learning itself may be changed remarkably through attention to the concerns of children. If a pupil does not respond well to an activity or subject in the classroom, one of the possible difficulties may be his lack of interest in it. This is, again, another way of

⁶ H. Carl Witherington, *Educational Psychology*, rev. ed., Boston, Ginn & Co., 1932, p. 76.

saying that the child cannot grasp why and how the subject or activity concerns him. What difference does it make in his life? If the teacher assumes that the activity is essential to his well-being, even if the pupil is not aware of it, the task of motivation by the teacher is to find a way to relate that to be learned to what concerns the child in his present on-going stream of experience. It is not enough to assume that the child will learn because the learning is good for him, or that it will make him a better reader, or that it will help him overcome self-consciousness. The role that interests play in the learning process demonstrates above all that education cannot be preparation for a future life so far as the child is concerned. For the child, the present and his concerns with it are far too compelling and challenging for him to spend his time in learning what teacher might think will be good for him a decade or two hence. An adult can realize what would be good for himself, he may be able to accomplish it through rigid self-discipline because he is interested in it—he knows it concerns him—but for a child a different pattern is demanded. The ability to sustain a rigid program of self-discipline to accomplish some complex task like, for instance, passing the state bar examinations or qualifying for a graduate degree at a university is an ability developed from much learning, following a complex pattern of interests, and attaining adult maturity.

Children should be led to solve the problems of their present concern in such a way that daily learnings lead to maturity of processes which will govern learning throughout their lives. Starting with the immediate and explicit interests of children, the teacher should be able to stimulate even more mature learning toward the implicit and potential concerns of the child in the future both as an individual and as a group member.

Cultural interests in the classroom will vary from one individual's passion for airplanes to another's for cowboys. Interests in the manners, behaviors, or dress of a favorite playmate may reflect a more basic need to belong and gain status. A thorough study of each child in terms of his basic biological and psychological needs will materially aid a teacher in planning how to

interest children in learning experiences. Interests can surely be built with this knowledge. Further, interests may be discovered by direct observation of children in their activities; for children are constantly exhibiting interest, constantly learning. By capitalizing upon an interest already apparent in the group, the teacher saves valuable time usually spent in setting the stage for learning. At any rate, whether interest is capitalized upon or built, the teacher has no choice but to start where the children are, not only with respect to their maturity and experience but also with respect to their present interests and concerns.

Since the individual and group interests of children are powerful forces in the learning process, teachers should attempt to use these interests and patterns of interest directly in the curriculum. But, as the above analysis indicates, interests are highly individual even though a pattern may be associated with a stage of growth, for each child as an individual tends to pass through each stage. As Shane says,⁷ a learning experience should be selected which promises to appeal to a wide range of individual interests. The unit or other complex learning activity should present opportunities for the exploration and satisfaction of many different concerns of children in a group, the search for a group interest as such being fruitless.

Too often teachers employing the authoritarian method of teaching try to interest all members of a group in exactly the same way. The fallacy of this point of view is that even the same experience cannot be the same for all persons. The same experience has different meanings among individual children.⁸ If a class is to follow a general interest, then a way must be found to give expression to each child's concept of the new experience and what it has to do with him. Interest-building cannot be accomplished until each child has been brought into the act through his own continuity pattern. Research has demonstrated that children as

⁷ Harold G. Shane, "Children's Interests," *NEA Journal*, 46, No. 4 (April, 1957), 238.

⁸ Florence Stratemeyer, et al., *Guides to a Curriculum for Modern Living*, New York, Bureau of Publications, Teachers College, Columbia University, 1952, p. 6.

well as adults desire to learn what is compatible with their concepts of self, their perception of their environment, and their goals and aspirations in the stream-of-life experience.⁹ In the final analysis, all learning is individual but the group furnishes a setting for much learning which could not develop at all in isolation.

Young children are well known for their insatiable curiosity, their constant barrage of questions, and their exploring and probing into the concrete world about them. Children want to learn. They are interested in their world. It is a world of excitement for them. They need to feel an increasing security about it by gaining more control and insight into it.

Typically, the child is not specifically interested in reading, writing, and arithmetic as such. He becomes interested in these basic skills as they help him develop his grasp of the world, as they help him find answers to his questions. These are abstract matters, and the child is seldom concerned with the abstract. Linking these skills and abilities with concrete experience and the immediate concerns of children is the compelling task of the teacher. Knowing the implicit and potential interest of the child to discover sensible generalizations about his world which as abstractions he would continue to use, the strategy of the professional teacher is to reach these more remote goals of education in the most efficient way possible—to begin with the now and the concrete.

Emily Baker¹⁰ made a comprehensive study of children's interests by providing an opportunity for the pupils of many elementary schools over a wide area of the nation to list the questions to which they most wanted to find answers. It was found that 33.31 percent of the children wanted to find answers to their questions concerning animals, 24.23 percent questioned man as a social being, 23.97 percent inquired about industries and commercial products, 22.68 percent wanted to know something about school, and 22.40 percent asked about communication. Other categories registering a signifi-

⁹ Walter B. Waetjen, "Learning Now and in the Future," *Educational Leadership*, XIV, No. 3 (February, 1957), 272.

¹⁰ Emily V. Baker, *Children's Questions and Their Implications for Planning the Curriculum*, New York, Bureau of Publications, Teachers College, Columbia University, 1945, pp. 17-19, 147.

cant number of pupil questions were war, travel and transportation, the earth, history and government, plant life, and weather and climate.

Although the first choice of children as indicated by the Baker study remained animals in all grades, as the children grew older they relatively tended to become more interested in human biology, astronomy, the earth, energy, and weather and climate. These areas of interest are, of course, generalizations of very specific questions such as: "Can dogs think?"; "How can a sea animal make a shell?"; "How do people know that the earth is round?"; and "Do some people really have 'blue blood'?" These statistics concerning the general areas of interest should help teachers with broad planning and procurement of materials and books. It should be emphasized, however, that children will not necessarily be interested in any collection of subject matter taken from these higher interest areas which the teacher may seek to impose upon the learning situation. The teacher can operate more efficiently if he will wait until the specific interests of each child emerge from the experiences the children may be undergoing. Obviously, expert teachers anticipate the emergence of many specific interests among children they have learned to know over a period of months. They build interest constantly in terms of their knowledge of the persistent interests and needs of individual children in the group. Yet, teachers know too that the unexpected is normal among active children and that it has great value in the learning process.

LEARNING BY SELF-APPROPRIATION

Whereas overall growth and physical maturation are automatic in the absence of illness or injury, learning is self-appropriating, self-initiating, and self-directing. Effective living and learning inevitably involve the child in constant exploration. Children are attracted to the call of the unknown especially when it is connected with a stimulating person. Moreover, they are attracted to organized learning activities in the group which take them on a voyage of discovery, into an experience of adventure, and a firmer grasp of their world. Even the most competent authoritarian teacher can-

not accomplish this kind of organization. Such learning activities depend upon freedom for the child to participate, to choose, sometimes to launch out alone, and always to enjoy the emotional rewards of personal discovery and invention. This can be accomplished only in a situation organized democratically and for problem-solving. Self-appropriated learning is its own reward and leads to further independent learning. Recital of "spoon-fed" learning and pat answers can lead only to intellectual dependence upon others. The police state arises and is sustained by pat answers and intellectual dependence. Self-appropriated learning is part of the design of democracy.

By seeking out, the child's behavior suggests to the alert teacher that he is ready for particular learnings. A teacher who frees himself from the routine of mass teaching can more easily spot this type of behavior and adapt to it. It is great teaching to help each child in his own way as he reaches out for learning. This type of teaching, of course, requires the teacher to be observant and sensitive to the behavior of pupils.

Despite apparent delays in the learning of the child, he tends to appropriate learnings in terms of his growth needs. He constantly selects in terms of his own sequence of developmental tasks. The teacher and the school should provide for optimum growth of the child by providing a rich environment which will encourage achievement without deprivation or coercion. The home or the school is responsible for deprivation in the environment if experiences essential to the child's individual growth pattern are absent. Good teaching will manage the environment so that essential factors may be found in the setting and the climate for learning. Obviously, children do not always appear to know what they must learn to solve their problems. Their self-selection process can become very frustrating without the friendly guidance of the teacher. Teachers open doors to many areas of knowledge for each child as the teachable moment arrives for that child. Nearly always, there are technical difficulties in the problem-solving activities of children which the teacher may help them to overcome.

Sometimes children do not reach out for learning because of

emotional disturbance. They fail to reach out because they are hurt. The teacher must deal with the emotional problem before learning can continue. In the case of emotional maladjustment, the teacher is not merely trying to get ordinary learning back on the track; he is also aiding in the rehabilitation of a whole personality and may require the additional help of a child guidance clinic, the family doctor, or a psychiatrist. If the school shirks from this responsibility, it may cause the child a lifetime of unhappiness and trouble. There is reason to hope if the child is engaging in self-appropriating learning activities within the context of the community endeavor of the classroom. There is reason for concern if he is increasingly dependent and withdrawing. The teacher who hopes to develop independence and self-selection in learning has no choice but to accept children who do not respond to the challenge of learning. At the same time, such children should be given definite help in achieving confidence in themselves through small successes in anticipation of the day when they may again participate successfully in the more complex demands of the learning process.

WAYS OF MEETING DIFFERENCES THROUGH THE CURRICULUM

It is a long road from the discovery of individual differences to the discovery of what to do about them in the curriculum. Although much about individual differences has been written in professional journals and textbooks, and a great deal more has been said about them in professional meetings and conferences during the past four decades, changes indicated in the teaching process have been slow to appear. Resistance to them has been prevalent among school and lay people alike and is due, in part, to the lack of general understanding of the problem and its far-reaching implications for the welfare of children and of society.

Because a genuine understanding of the problem by the main body of teachers and administrators has evolved slowly, some abortive attempts to level differences among pupils have marked the recent history of American education. These attempts have been

based on the assumption that standard graded subject matter and skills could be learned by all children, provided enough time and enough drill were utilized with the slower learners. Of course, deprivation of the above average and gifted learners was a by-product of this process which was overlooked by many. Thus the hue and cry among many teachers, supervisors, and testing experts was, "Bring them up to grade level!" Too often, the *naïve* teacher would feel ashamed if she could not bring all her pupils up to grade level. Teachers worked overtime to develop remedial procedures in the various school subjects. Through homework and aid from parents, the hapless pupil of below average ability was pressured into trying to achieve for the pride of home and school.

Well-intentioned teachers cannot level the inevitable differences *among children*. Standards of subject matter for each grade are meaningless in view of the wide range of differences in abilities apparent at any grade level. Subject matter is relative to individual learners within the group as well as to the group itself. While effective teachers teach subject matter, they do not make the mistake of basing learning on pre-established grade level standards for the subject matter. Teachers who understand how children learn, know better. According to Burton,¹¹ other considerations are far more important in determining a teacher's point of departure in teaching. An individual learns when his activities are directed by a purpose consciously selected by himself, are continuous with his on-going life activities, are interactive with his social and physical environment, and are integrative to the learner in that the learning leads to ever maturing adjustments. Activities the reverse of these, that is, activities in the life of the individual which are purposeless for him and unrelated to or in conflict with his life or environment may lead to personality disorders. In general, then, a course of study to be learned by all is unsound.

There is a place, however, for systematic sequential textbook studies in reading and arithmetic for most children. Ideally, instruction in these areas should be highly individualized with pupils

¹¹ William H. Burton, *The Guidance of Learning Activities*, 2nd ed., New York, Appleton-Century-Crofts, Inc., 1952, p. 22.

working toward goals commensurate with their own abilities. In large classes individualized techniques may have to give way to group instruction. Even in smaller classes systematic work in reading, arithmetic, and language may be given with profit in temporary or functional groups organized for specific tasks.

Efforts to level differences are undesirable both from the standpoint of society and of the personality. Life does not require individuals to be alike. Instead, it places a premium on uniqueness.

GROUPING BY ABILITY

For those who despair of leveling differences among children, ability grouping has sometimes been offered as a panacea for organizing children for learning. The assumption back of the homogeneous grouping hypothesis is that groups organized on the basis of general ability as determined by standardized achievement or intelligence tests are sufficiently homogeneous for instructional grouping. Thus apparently some believe that the same course of study can be applied to the same students for the same length of time with the expectation of nearly uniform results. Specifically, it is assumed that individual trait differences can be ignored, or that the individual's various differentiated traits are highly correlated with his mental age or educational age (whichever is being used).

However, Anastasi and Foley¹² have amassed and summarized data proving this assumption to be essentially false. Individual differences in traits and abilities with which the traditional school is concerned were reduced by no more than twenty percent through ability grouping. Other traits which are becoming of increasing concern in the modern curriculum were excluded from this analysis. In view of this research, homogeneous grouping becomes virtually a myth. These findings suggest that too little is to be gained even in formal classrooms through homogeneous grouping, and this mechanical way of classifying pupils surely blocks the efforts of modern teachers trying to develop a democratic community in the classroom.

¹² A. Anastasi and John P. Foley, Jr., *Differential Psychology*, New York, The Macmillan Co., 1949, Chaps. 14-15.

Parker and Russell¹³ suggest that homogeneous grouping of even two children is impossible, to say nothing of thirty-five, and that the general school population cannot be divided into three or more ready-made groups. Although functional or temporary grouping is desirable on occasion, most probably there is no one basis suitable for classifying pupils. At any rate, there is little research evidence to support any fixed or rigid grouping.

Wrightstone¹⁴ suggests that ability grouping is seldom satisfactory and is favored by teachers who really want to be freed from the responsibility of adapting to individual differences. These differences remain, none the less, even in the homogeneous group.

Wasburne cites situations in the cities of Detroit and Los Angeles where pupils were grouped, it was claimed, on three levels of mental ability. The range of differences remained about the same at the end of the year when achievement tests were administered. In almost any subject tested there was "an overlap between 'ability groups' that was much greater than the differences in their median achievement. The problem of promotion or non-promotion remained."¹⁵

RETAINMENT AND ACCELERATION

Schools which emphasize subject matter achievement by graded standards have for years retained (failed) or promoted children without regard for other factors entering into the development of the children. Often, too, these annual decisions are made without the benefit of research findings which are available on this question. The teachers and administrators who engage in this practice apparently assume that children will profit by repeating the same subject matter over again for another year. Competent research has consistently labeled this assumption false. In fact, the evidence demonstrates that the child tends to achieve better if promoted

¹³ J. Cecil Parker and David H. Russell, "Ways of Providing for Individual Differences," *Educational Leadership*, X, No. 3 (December, 1953), 169-170.

¹⁴ J. Wayne Wrightstone, "What Research Says About Class Organization," *NEA Journal*, XLVI, No. 4 (April, 1957), 254.

¹⁵ Carleton W. Washburne, "Adjusting the Program to the Child," *Educational Leadership*, X, No. 3 (December, 1953), 141.

with his age group.¹⁶ Washburne cites the experience of the city of Los Angeles after that city abandoned its attempt to group homogeneously. Half of the pupils in the city who had failed at the end of selected grades were promoted despite the teacher's recommendation for retention. The other half repeated the grade as suggested. Both groups were tested at the termination of the following school year. It was determined that the children who had been promoted learned more than those who were retained.¹⁷ After the Los Angeles experience, many other cities decreed universal promotions. Although teachers did remedial work with the slow learners and attempted to enrich the work of the faster learners in most schools, the textbooks, tests, and standards for work remained, largely, on a single grade level for any age group of children.

Acceleration or double promotion of the intellectually gifted child has been a part of the general rationale of American schools. Some few children gain by one or two double promotions during their progress through the lock step graded system from grade 1 through grade 12. By and large, however, these gifted children are promoted into groups of pupils socially and physically above them and do not always achieve up to expectation.¹⁸ In fact, the mental hygiene hazard for such children is very real because of the increased pressures and strains which are brought to bear upon them. Intellectual maturity is not enough. Most vocational and professional career situations demand the maturity of the whole person and have no place for those who may have completed their formal education, but are still too young and socially immature. It is possible that some intellectually gifted children have an all-round maturity which justifies acceleration, but their number is exceedingly small.

Neither nonpromotion nor acceleration should be cast out entirely by teachers and administrators. Particularly is this true in

¹⁶ Parker and Russell, *op. cit.*, p. 169.

¹⁷ Washburne, *op. cit.*, p. 169.

¹⁸ Hollis L. Caswell, "The Great Reappraisal of Public Education," *NEA Journal*, XLII, No. 2 (February, 1933), 100.

schools with an inflexible curriculum pitched to the median learner. Individual cases will have to be considered every year in such a school. Extreme caution should be exercised in such cases, and the practice of nonpromotion or acceleration should never become general.

In recent years a few teachers who take the developmental view of the child have broken the rigid curriculum patterns which create problems of pupil progression through the elementary school. They have developed a program that individualizes the learning of children to such an extent that grade levels lose all meaning. These teachers often are hampered by the lack of appropriate materials for children who are actually working on as many as eight or nine of the grade levels in the various areas of the curriculum. If pupils are encouraged to learn at their own rates of potential, a wide range of materials must be available to each classroom. Given general application of these individual progress procedures in self-contained classrooms, continuous promotion in elementary schools would be practical and sound. The individualization of instruction in the skill areas, with group experiences provided in areas of common concern, will undoubtedly prove more significant than all of the dated schemes of grouping children for instruction. The answer to this perplexing problem, then, appears to lie in teacher-pupil relationships rather than in administrative procedures for classification of pupils. The whole concept of promotion and the grade level concept upon which it is based may be entirely irrelevant to the learning situation. The sooner these concepts are recognized as faulty, the better.

SELF-INSTRUCTIVE MATERIALS

Two early attempts to individualize instruction took place in Winnetka, Illinois, and in Dalton, Massachusetts. In the former, the traditional subject matter curriculum was rewritten and reproduced as self-instructive textual materials and diagnostic tests. Pupils were allowed to proceed at their own rate through these graded materials. In Dalton, the pupils were encouraged to draw up contracts or plans for individual development within designated

time periods. The materials used often included little but the traditional textbooks available. However, both these plans provided for individual progress. The individualized work in the skill and subject matter areas was supplemented by socializing experiences with the pupil's peer group. These plans, however, often divorced the mechanics of learning from the problems and social experiences which gave them function and meaning. The idea of self-instructive materials like those of the Winnetka plan gave rise to the workbooks so common in schools throughout the United States to-day. The difference is that workbooks in the usual classroom situation today are used in mass teaching along with the textbook and seldom are used as originally intended—to individualize instruction. Too often, workbooks are used to keep a group of pupils busy while the teacher takes another group for systematic instruction. Rarely are workbooks selected from several grade levels of difficulty for a particular child who may be working above or below grade level. The lock step system is preserved in this unfortunately, as in most types of material selected for instruction in the typical school.

THE PROJECT METHOD

The project or unit method has been advanced as a way of dealing with individual differences. As originally conceived, the method offers many opportunities for individuals to contribute to the community endeavors of the classroom, to receive recognition for the unique worth of their contributions, and to extend knowledge and skills in the performance of tasks in connection with these community-like endeavors. The essentials or fundamentals of learning become relative to the tasks selected by the group or by the individual. Each pupil finds himself engrossed in group activities which extend his learning and also in individual activities which grow out of or lead into the group project. Through the wide range and diversity of experiences provided by the project, pupils choose, select, and react on their own levels of maturity. The preponderance of research data on this method indicates that children learn skills and fundamental subject matter as well as or better

than more formal and "logically" organized programs. However, teachers and parents alike sometimes lose confidence in the method before it is given a full unbiased trial. Their fear is that gaps are left in the learning of the child. Their focus is still on something outside the child, rather than his own pattern of continuity. Of course, more serious gaps and deprivations are possible when children are tied down to the lock step system. Such blind faith in traditional curricular materials and in authoritarian teaching is inexcusable after a half-century of research in child development and the psychology of learning.

As practiced in the typical school, the project method is a poor design for meeting individual differences. Often the project becomes a veneer for an essentially unchanged authoritarian and mechanical curriculum. Activities of the type suggested by Kilpatrick and Dewey become side shows rather than the core of experience for pupils. The project seldom progresses beyond bulletin board decorations and only rarely does it enter into classroom process. Some activity programs have utilized individual differences but there is little deliberate effort to change the usual mass grade assignments in arithmetic, spelling, or reading which are aimed at the average pupil's ability.

The classroom project or unit as properly conceived¹⁰ will bring the pupil into contact with countless simple and complex outcomes. These outcomes are, however, always unique to each pupil and are hardly ever uniformly attained. Teachers who have a genuine understanding of the process do not organize a set of fixed goals which they expect all children to learn. Instead, they understand that the learning process set in motion by the unit method actually prohibits the attainments of uniform results. Different children achieve similar learnings in differing degree. They acquire different experiences from the same process due to their differing backgrounds, needs, interests, and abilities. A series of projects over a period of years will give each individual learner opportunity to attain a substantial number of learnings in terms

¹⁰ Burton, *op. cit.*, p. 401.

of his individual pattern of continuity and capacity to learn. In addition to desirable social learnings for successful living, the learner is encouraged to appropriate a rich individual education through division of labor and self-selection.

CLASSROOM GROUPING

Grouping of one kind or another has been the perennial solution for individual differences. Despite all of the efforts of teachers to group children for minimum essentials, basic skills, or fundamentals however, there is little research evidence that division of a class into three or more rigid groups produces better learning than full class organization.²⁰ If teachers would stop debating the relative merits of various grouping plans and make generous use of the scientific information available from the field of child growth and development, they would conclude eventually that systematic plans for grouping children are hardly worth the effort.²¹ Manipulation of pupils to fit a course of study is simply naive and non-professional when compared with a competent teacher's provision of learning experiences appropriate to the growth patterns of individual children, whether such children are working in a group situation or alone, whether they are slow or fast learners, or whether they are emotionally disturbed or well adjusted. Teachers have known for many years how unrealistic is the demand that all children in the Grade 6 have the ability to read the social studies or science textbook for that grade. Furthermore, they have known that progress in any given area of the curriculum by any given child is hardly ever uniform but is occasioned by rises and plateaus in learning. In either cases, the competent teacher cannot find comfort in any plan except in flexible, temporary, or functional grouping.²² The teacher is likely to be more successful in the timely adaptation of materials and experiences to these and other problems of

²⁰ Parker and Russell, *op. cit.*, p. 170.

²¹ Warren A. Ketcham, "Child Growth and Development," *Childhood Education*, December, 1953, pp. 156-159.

²² Helen Hay Heyl, "Grouping Children for Instruction," *The National Elementary Principal*, XXXVIII, No. 4 (December, 1958), 8.

mately the same age at the opening of each school year. The task of the teacher will be to take each child as far as possible in terms of the pattern of growth of each during that year. When each teacher in turn does the same, the lock step system will disappear.

Although it is difficult under any method of class organization to give individual attention to thirty or more children, there is no substitute for direct personal attention by the teacher to the needs of each child in a classroom. Obviously, such individual attention can be more successful with the reduction of class size. However, with twenty-five or fifty-five, that learning is best which is individualized either by division of labor in group problem-solving or by direct teacher intervention. Even in large classes, both of these forms of individualization are possible and effective. The key to effective teacher involvement in individualized learning and differentiation in group problem-solving is a curriculum design which frees the teacher from mass teaching of a rigid course of study. Not only must a teacher be able to walk around a room and help individuals with a variety of learning problems on many levels of maturity but also he must be able to organize a classroom learning process which can be sustained even without the continuous direct supervision of the teacher. Within the larger community of action characterizing this classroom process, flexibility of grouping and pupil relationships must be maintained. Groups solving problems are nearly always required to be heterogeneous with individualization of many specific tasks. For specific practice or remedial work, a plan of pupil partners may be instituted whereby one pupil can help another. Individual help or small flexible groupings to learn a new concept or perfect a new skill may take much of the teacher's time during the day. When all members of a class can share a given experience, the teacher will assume the role of group leader unless, even better, the particular activity calls for leadership by a pupil. In such a situation the teacher never finds it necessary to abdicate his authority or lose control of the process. Yet there is maximum opportunity to work within the stream-of-learning activities and help the individual in a face-to-face relationship.

SPECIAL PROVISIONS FOR THE GIFTED CHILD

Special provisions for the education of the intellectually above average and gifted child have been a *major concern* in recent years in the whole debate over ways of meeting individual differences, and each of the approaches discussed in the foregoing furnish an answer to this important question of how such children can be adequately challenged and guided. The approach most frequently advocated by the general public, and especially by the uninformed critics of public education, is that the gifted child be segregated for special instruction. Thus, ability grouping of one type or another appears to be the popular solution. Some people even advocate separate schools for those of high ability.

When the concepts of vertical enrichment and individualized teaching within the context of group problem-solving dominate the study program of the American elementary school, the clamor for segregation of the gifted will cease. Vertical enrichment within the curriculum will make it possible to accelerate the learning of the fast learner without submitting him to mental health hazards typical of segregated situations. Motivations for maximum fulfillment of individual potential will shift from essentially competitive and egocentric bases to cooperative and socially rewarding bases. Marking and grading practices will shift from a comparison of the attainments of unlike individuals to a comparison of the actual achievement of the individual to his own potential achievement. Just doing well will not be enough for the gifted pupil, but doing as well as his capacities permit will be the main criterion for excellence. There will be no reward for a passing performance when full mastery is offered and expected. This is another way of indicating how each child, regardless of capacity, will be guided to optimum development. The nation has much to gain from such an educational policy not only when applied to the education of the gifted child but to *all* children. The time apparently has come in the United States when educational conservation must be given careful consideration.

For the intellectually gifted child an education which will effec-

tively nurture genius is needed not the mere acceleration of the typical subject matter program. Genius is more than the possession of knowledge, it is creative. Geniuses solve problems beyond the reach of the ordinary mind. They unlock the riddles of the universe. They add to culture and push civilization ahead.

Can genius be developed? A British philosopher of science, Lancelot L. Whyte,²³ thinks there is no direct and sure process for the cultivation of genius, but teachers can attract its attention by posing the right questions and making the learning process a voyage of discovery. He cites the accomplishment of Michael Ventris in deciphering the Cretan script on tablets found at Knossos. Ventris, when a boy of thirteen, heard a lecture by Sir Arthur Evans in London. Evans mentioned the unsolved riddle of the Cretan script and deplored the lack of knowledge of the ancient Cretan civilization because no one had yet found the key to the language. Ventris seized upon this problem, became obsessed by it, worked for seventeen years on it, and finally succeeded in solving it. One could cite the experiences of an Edison, a Kepler, or an Einstein, to illustrate how genius, apart from intelligence, is essentially dependent upon persistence in following a quest with almost child-like wonder and curiosity. There were serious subject matter gaps in the training of each of these great men. None was particularly challenged by the ordinary course of studies of the school. Yet, when these men set about to find answers to the profound questions which attracted their attention, they learned at a furious rate and accepted help from all quarters. Unfortunately, the schools could take little credit for the development of their genius.

If the attention of the young must be called, as Whyte suggests, to the right questions as a deliberate policy, does it not follow that the school should organize its curriculum around the problem-solving process rather than around a collection of tabulated facts? Will not the known facts also be used constantly by children as they engage in the quest for new answers? Is research dependent

²³ Lancelot Law Whyte, "Can We Grow Geniuses in Science?" *Harper's Magazine*, June, 1957, p. 49.

upon knowing all the facts before the researcher can proceed? Is there not danger that the "child-like wonder" so important in the behavior of the genius will be lost if problem-solving is delayed? These and other related questions are more significant in developing a curriculum for the gifted and for any child than the threadbare arguments for grouping or acceleration.

SPECIAL PROVISIONS FOR THE SLOW-LEARNING CHILD

The educational enterprise of the country has had more experience with education of the slow learner than with education of the intellectually gifted. One principle has evolved from this experience with clarity: mentally retarded children need individualized instruction. Again, it is seen that all children need individual teaching-learning situations appropriate to their own pattern of growth. Children on either end of the continuum of ability have presented problems to the typical classroom teacher because instruction typically is pitched to median achievement. Many educators and patrons of the school have been tempted to segregate children who fell on either extreme, but even with the practice of segregating special classes of mentally retarded children, individualization of learning had to be instituted. Perhaps a great waste of facilities and time could be prevented if a curriculum design permitting more individual attention were made possible in the education of all children.

Not all slow learning children are mentally retarded, of course. Great care should be exercised in diagnosing the learning difficulties of children. The chief problem may be psychological or emotional rather than the lack of native intellectual capacity. The behavior of the teacher will be significantly different if a given child is diagnosed as a remedial case rather than a slow learner. The one calls for quite different treatment from the other even when the achievement of the two appears to be at or near the same level. Again, mass teaching will miss the point.

The slow-learning child should compete only against his own record. Competition in the typical classroom where children of

varying abilities are assigned similar tasks inevitably creates failure experiences for the slow learner. This creates a poor mental attitude toward learning for the child and effectively curtails any progress which could have been expected. These failures are so frequent they damage mental health. A feeling of success is just as important to the slow learner as to the average or gifted learner. In the typical school program, the slow learner seldom feels successful or adequate. This denies the principle of educational conservation in a society now demanding so much of all its citizens.

INDIVIDUALIZED TEACHING IN A DEMOCRATIC CLASSROOM

Teachers have just begun to understand how individual differences affect learning in the classroom and in all activities of school life. They have known for many years some of the characteristics of those differences, the physical, the emotional, the social, the intellectual. They have known, too, that particular grade levels have little meaning since the abilities of children in any particular grade overlap those of several other grades. Differences in intelligence were long thought to be the primary consideration in any plan to individualize instruction. In recent years, psychologists have testified that the emotional differences are even greater. Emotional problems of children and mental health hazards in home and school environments block the effective learning of many children. Individualization of instruction often requires patient counseling before basic academic work may continue. Large classes and rigid grouping procedures often rule out individualized teaching. The individual who has even a minor problem often has been lost in the rigid grouping pattern. Rigid grouping often results in the time-wasting practice of isolating the subject matter of the various curriculum areas. The day is simply not long enough to encourage individualization of teaching in such an inflexible schedule. A really impressive body of research and practical experience by teachers in experiments have been building up for the past several decades which indicate that failure and maladjustment of children too often result from the inability of teachers to individualize in-

struction. Thus, inadequately educated children—pupils with great gaps in their knowledge and skills—represent a deplorable waste of human resources in the traditional school program. Further, the remedial techniques which have flourished for the past thirty years are based mainly on the rationale for individualizing teaching. The remedial teachers simply do what the regular teachers could not or would not do—concentrate on individual diagnosis and guide individual progress in terms of the child's pattern of continuity. Nowhere is the individual approach more completely substantiated than in remedial and special education. Probably these special measures in education could be largely eliminated if all teaching were oriented to the individual pattern in the first place.

While many social concepts and behaviors depend upon group activity, basic skill development must be largely individualized. Individualization is primarily an attitude of the teacher and of the pupil rather than a method. It is the operation of a continuous point of view rather than a specific device to be manipulated. As a procedure, it is essentially guidance.

Individualized instruction may take a variety of forms. While suggesting emphasis on the individual child, it does not always mean working with one pupil at a time. There are degrees in individualized teaching ranging all the way from listening to a child read his own individual selection to a whole class procedure or routine. The key factor is attention to individual problems.

FUNCTIONAL GROUPING IN A DEMOCRATIC CLASSROOM

Skill development is an individual matter. Group experiences and activities can help. Experiencing situations are vital. Systematic teaching when the teachable moment arrives is important. Skills or intellectual concepts cannot be divided and assigned to various grade levels, however, due to the tremendous range of differences among children. Subject matter of every degree of complexity must be taught at any level of the elementary school if the teacher truly takes the child "where she finds him." Skills are not developmental just because they are planned for and arranged in a particular se-

quence in a book. They can be developmental only in terms of a particular child's pattern of growth. In view of these sometimes hard-to-live-with facts of child development, rigid grouping in the basic skill subjects must give way to a more flexible and common sense curriculum design in which functional grouping and individualized instruction become the pattern.

Functional grouping is temporary grouping. It exists for a time to do a specific job. Sometimes functional grouping is a committee of children in group problem-solving. At other times functional grouping is two children who need help from the teacher in structural analysis of words. Functional grouping may at times involve a whole class when the teacher senses that a great majority of the pupils, regardless of ability, could profit from the introduction of a concept, for example the topic sentence of a paragraph. Pupil partners in spelling may be considered a functional group. Functional grouping always springs from task situations. There is a job to be done. Teacher and learners organize to get the job done. When the job is finished, the grouping dissolves. Regardless of the number of children in a given activity, the teacher may individualize instruction if he is sensitive to individual learning by constantly using diagnostic techniques and making adaptations to the process of learning.

The basic skills of the curriculum emerge for the most part out of the larger process of problem-solving going on in the class group. These experiences furnish meaning and motivation for the individual's learning. The unit or problem situations are not sufficient, however, to give the individual learner an adequate command of skills. A more systematic program is necessary. Therefore, each child develops under teacher guidance an individual program for learning basic skills. Important in this process are both functional grouping and individual progress.

SELF-SELECTION IN READING

Recent research in the New York City schools on programs of individualized reading emphasizing Olson's concepts of *seeking*,

self-selection, and *pacing*²⁴ has been reported by that system's Bureau of Educational Research.²⁵ Forty-six classes were selected for intensive study by the Bureau's staff members. The study focused on the types of activities incorporated in this type of reading program over a long period of time and on the procedures of the daily reading period. Great variety characterized these self-selection programs from class to class; however, most displayed the following outstanding features:

1. Children made their own selections from among the reading materials provided.
2. Children read independently at their own individual pace, keeping simple written reactions and records.
3. Teachers worked with each child alone as interest, need, and time dictated.
4. Teachers often gave on-the-spot help as they walked about the room and assisted children in a variety of ways.
5. Teachers planned special functional grouping and other full class activities, often on the basis of needs encountered during individual sessions, to develop specific skills or overcome confusion.
6. Teachers arranged a time for sharing impressions and discussing the books read either before the whole class or in interest groups.
7. Teachers kept brief records of individual pupil progress in reading.

The research workers in this New York City study found that teachers appeared more concerned with skill development among the children than with the basic reader approach. Apparently, the teachers assumed more responsibility for this skill development in contrast to previous dependence upon the Reading Manuals for this task. Teachers felt that time was saved by both pupils and by

²⁴ Willard C. Olson, "Seeking, Self-Selection, and Pacing in the Use of Books by Children," *The Packet, Boston*, D. C. Heath & Co., Spring, 1932, pp. 3-7.

²⁵ May Lazar, "Individualized Reading: A Dynamic Approach," *The Reading Teacher*, XI, No. 2 (December, 1937), 75-83.

themselves when skills were taught at the time the need was felt. Teachers experimented with many techniques of valuation and record-keeping. They understood clearly the limitations of the usual instruments of measurement. They concluded that brevity in record-keeping was essential to good management of time and adequate for effective evaluation and guidance of individual programs. Both teachers and children appeared more interested in reading activities and materials than they had in previous reading programs. The general conclusions were that the program was successful, sound, and likely to be adopted by good teachers. Of all previous projects, this one appeared to generate more genuine enthusiasm among teachers, supervisors, and administrators. A general belief shared by most of the participants in the study was that this type of reading program contributed more to curriculum integration than other experimental reading programs of the past and that individualized reading was doing more for children.

Confirming the findings of New York City study on individualized reading is the recent report of similar programs in several Los Angeles County schools.²⁶ Within these broad action research studies a careful experimental study was carried out in Christian Sorensen School, Whittier Elementary School District, entitled: "A Comparative Study to Determine Whether Self-Selective Reading Can be Successfully Used at the Second-Grade Level." This study compared the reading gains made by carefully selected and matched children in eight classes of Grade 2. Four classes constituted the control group; in these classes conventional basic reader materials and reading ability groupings were used. The experimental group of four classes utilized self-selection and individualized teaching. One hundred and sixty boys and girls in these classes were matched by mental age and socio-economic background. The teachers of the classes were matched in terms of their educational training and their experience. At the end of a full year experimental program, the control group averaged 1.14 years of gain in total reading; the experimental group made a more impressive

²⁶ Marian Jenkins, "Self-Selection in Reading," *The Reading Teacher*, XI, No. 2 (December, 1957), 84-90.

gain, averaging 1.41 years in total reading. The experimental group made other significant gains in various aspects of the study. Forty-six percent of the children in the experimental group scored gains of more than 1.6 years as against only 25 percent for the control group. In comprehension of material read, the experimental group made the most spectacular gains; 59 percent of the children gained more than two years in comprehension while only 24 percent of the control group made similar gains. Even in vocabulary the experimental group averaged almost a one year gain over the control group. The findings indicate that self-selection in reading does work at the level of Grade 2 and, more broadly, have some significance for self-selection at any level of the elementary school.

SUMMARY

Ways of meeting individual differences in the classroom have not always been developed as rapidly as scientific knowledge of pupil differences. Without changing significantly the types of materials and subject matter that children were traditionally called upon to utilize, early attempts to meet differences focused upon the use of self-instructive materials. The change in class organization was from *mass teaching to individual progress*.

The project or unit method was advanced as a means of providing for differentiated learning in terms of division of labor as the group approached a complex problem. This method was different. It abandoned the traditional course of study in favor of organizing subject matter around a problem and in terms of the individual pupil's ability to learn. It had, and still has, many advantages over teaching that attempts to impose a course of study with graduated standards upon heterogeneous groups of children.

Ability grouping within the classroom has been a popular but a rigidly limited treatment for individual differences. The practice of ability grouping should be drastically reduced and used only for those special occasions when special tasks require special abilities.

Enrichment and individual attention given over and above the requirement of a minimum standard of subject matter mastery has been helpful to many above average pupils. The dual program is,

however, wasteful of time and intrinsic motivation of the pupil when compared with a program paced to the individual pattern of continuity in the first place. The best practices in providing for either the intellectually gifted or the slow learner reflect the efficacy of the individually paced program.

Individualized teaching and functional grouping are not mutually exclusive but complement each other. There can be no program of completely individualized learning without sacrificing democratic values and behavior as well as the intellectual stimulation of group processes. A curriculum which meets individual needs to a maximum degree will be patterned in terms of functional grouping as well as individual rates of progress. This is the instructional differentiation of a curriculum designed for democratic action and problem-solving. Finally, pupil experiences in the continuity of his living both at home and at school probably indicate best the ways in which teachers with guidance and direction can enter the learning situation.

Selected Readings

Fox, Lorene K., and McCullough, Constance M., "Individualized Reading," *NEA Journal*, 47, No. 3 (March, 1958), 162-163.

Harris, Albert J., *How to Increase Reading Ability*, 3rd ed., New York, Longmans, Green & Co., 1956, Chaps. V and VI.

Olson, Willard, *Child Development*, 2nd ed., Boston, D. C. Heath & Co., 1959, Chaps. 7, 12, & 13.

Shane, Harold G., and McSwain, E. T., *Evaluation and the Elementary Curriculum*, rev. ed., New York, Henry Holt & Co., 1958, Chap. VIII.

Stendler, Celia B., *Teaching in the Elementary School*, New York, Harcourt, Brace & Co., 1958, Chap. IV.

CHAPTER 5

Curriculum Continuity

CONTINUITY OF LEARNING IS INDIVIDUAL

Most elementary schools have been organized for instruction as though curriculum continuity would be guaranteed by logical arrangement of subject matter laid out in blocks and assigned to grade levels. However, curriculum continuity is something that occurs within the learner.² It is different for each person. His experience and his ability to interpret experience make his pattern of continuity unique. It is natural and normal for the individual to follow up his own leads, to select experiences which tend to complete a picture, or pursue situations as they tend to fit logically into his *system of meanings*. This organic view of continuity also supports the contention that elementary education should be devoted to the process of helping pupils improve their selections of learning activities. In this way it will approach a genuine curriculum continuity. This is a difficult concept to understand, and this chapter will elaborate upon the ways teachers can help children learn with few breaks in continuity.

REDEFINING CURRICULUM CONTINUITY

The 1958 Yearbook of the Association for Supervision and Curriculum Development, in making an exploratory study of articula-

² Association for Supervision and Curriculum Development, *A Look at Continuity in the School Program*, 1958 Yearbook, Washington, D.C., NEA, 1958, p. 130.

tion and continuity in school programs, has this to say about the changing concept of continuity in learning:

It is apparent that we cannot give continuity to children. It would be very difficult to devise a formula by which an optimum continuity of learning could be guaranteed for all learners. Certainly, attempts to define scope and sequence in terms of graded subject matter content or units to be covered have not achieved the best continuity of learning for all. It should be possible, however, to develop a teaching-learning situation wherein children and youth find it easier to gain a sense of wholeness and continuity in their learning. It would seem that what is known about the learning process and the difficulties students face in their progress through school makes it imperative that a different organizing base for curriculum experiences be sought through a redefinition of the content of our school programs.²

Whereas courses of study usually list specific objectives of instruction in terms of items of content to be mastered, less emphasized are the basic concepts identified with (1) the developmental tasks (2) the persistent life situations, (3) the ever expanding horizons of experience, or (4) the continuity of problem-solving. Within these contexts, however, is the possibility of demonstrating to the child the interrelatedness of subject matter, the meaning and logic of systematic fields of knowledge, and how his basic skills fit into the patterns of effective living. It is doubtful that this integration and logic can be developed at all in the mechanical plans of the typical course of study involving factual information and directed skill activities.

CONTINUITY IN DEVELOPMENTAL TASKS

THE CONCEPT OF DEVELOPMENTAL TASKS

The concept of developmental tasks has been presented by Havighurst.³ These are the tasks which every American child must learn in the growing up process if he and his society are to judge his growth satisfactory, promising happiness and success. A de-

² *Ibid.*, p. 131.

³ Robert J. Havighurst, *Developmental Tasks and Education*, Chicago, University of Chicago Press, 1948, pp. 6, 8.

velopmental task is one which confronts the child at any stage of his development. He may meet a particular task in several different ways at various levels of development. Successful achievement at each stage is necessary for further development in succeeding stages. Failure to meet the challenges of developmental tasks leads to unhappiness and social disapproval. Developmental tasks arise out of a matrix of factors and vary in different societies. Some of the factors are physical maturation, cultural pressures, the emerging personality, and the values of the child society.

DEVELOPMENTAL TASKS OF MIDDLE CHILDHOOD

The developmental tasks confronting elementary school children affect vitally their progress in school. A better understanding of these tasks is required of the typical teacher so that curriculum development will exploit fully the learning opportunities present in these task situations. A summary of the principal developmental tasks facing elementary school children are divided into those faced by pupils in middle childhood and those in later childhood and adolescence. However, since children mature at different rates, not all children of the same age are at the same stage in mastering developmental tasks. It is necessary, therefore, to overlap somewhat the ages included in the two groups. The developmental tasks for children from about 6 years to about 12 years of age are as follows:

1. Learning physical skills necessary for ordinary games.
2. Building wholesome attitudes toward oneself as a growing organism.
3. Learning to get along with age-mates.
4. Learning an appropriate sex role.
5. Developing fundamental skills in reading, writing, and calculating.
6. Developing concepts necessary for everyday living.
7. Developing conscience, morality, and a scale of values.
8. Developing attitudes toward social groups and institutions.⁴

⁴ Robert J. Havighurst, *Developmental Tasks and Education*, New York, Longmans, Green and Co., 1952, pp. 15-28.

To demonstrate how children tend to go through various stages or behavior sequences in meeting developmental tasks, the task, "Learning physical skills necessary for ordinary games," is elaborated in excellent fashion by Gesell and Ilg in their presentation for ages 5 through 9:

5 years—There is a greater ease and control of general bodily activity, and economy of movement.

Posture is predominantly symmetrical and closely knit. May walk with feet pronating.

Control over large muscles is still more advanced than control over small ones.

Plays in one location for longer periods, but changes posture from standing, sitting, squatting.

Likes to climb fences and go from one thing to another. Jumps from table height.

Likes to activate a story. Runs, climbs onto and under chairs and tables.

Throws, including mud and snow and is beginning to use hands more than arms in catching a small ball but frequently fails to catch.

Alternates feet descending stairs and skips alternately.

Attempts to roller skate, jump rope, and to walk on stilts.

Likes to march to music.

6 years—Very active; in almost constant motion.

Activity is sometimes clumsy as he overdoes and falls in a tumble. Body is in active balance as he swings, plays active games with singing or skips to music.

He is often found wrestling, tumbling, crawling on all fours and pouncing at another child, and playing tag.

Large blocks and furniture are pushed and pulled around as he makes houses, climbs on and in them.

Balls are bounced and tossed and sometimes successfully caught.

He tries skates, running broad jump, and stunts on bars.

Some boys spend much time digging.

7 years—Shows more caution in many gross motor activities.

Activity is variable and he is sometimes very active and at other times inactive.

He repeats performances persistently. Has "runs" on certain activities such as roller skating, jump rope, "catch" with a soft ball, or hopscotch.

There is a great desire for a bicycle, which he can ride for some distance although he is only ready to handle it within limits.

Beginning to be interested in learning to bat and pitch.

Boys especially like to run and shoot paper airplanes through the air.

Likes to gallop and to do a simple running step to music.

May have a desire for dancing lessons.

8 years—Bodily movement is more rhythmical and graceful.

Now aware of posture in himself and others. Likes to play follow the leader.

Learning to play soccer and baseball with a soft ball and enjoys the shifts of activity within the game.

Girls are learning to run into the moving rope and can run out when beginning to fail but cannot vary step while jumping.

Stance and movement are free while painting.

Very dramatic in activities with characteristic and descriptive gestures.

Many enjoy folk dances but do not like rhythms unless of a spontaneous dramatic nature.

9 years—Works and plays hard. Apt to do one thing until exhausted such as riding bicycle, running, hiking, sliding, or playing ball.

Better control of own speed but shows some timidity of speed of an automobile, of sliding and of fast snow when skiing.

Interest in own strength and in lifting things.

Frequently assumes awkward postures.

Boys like to wrestle and may be interested in boxing lessons.

Great interest in team games and in learning to perform skillfully.⁵

Thus, physical maturation and cultural pressures both from adult society and from the child society combine to frame the sub-tasks of this long sequence of development. The behaviors expressed at each level of development are consistent with the capability of the organism at that time and the social demands that are

⁵ Arnold Gesell and Frances L. Ilg. *The Child from Five to Ten*, New York, Harper & Bros., 1946, pp. 232-233.

being made on the individual. These are typical or mean characteristics of growth. Many children lag behind the average; others spurt ahead. Each goes through each stage, however, if growth is normal and successful.

Similar sequences of behavior may be charted for developmental tasks other than physical. There is an inevitable continuity inherent in this pattern of development which has significant relationships with curriculum continuity. When the focus is upon the growing child and his own unique longitudinal pattern of development, it is difficult to conceive of any semblance of continuity in typical school situations, where large numbers of children who are on various levels of development are grouped for instruction in logically organized content.

DEVELOPMENTAL TASKS OF LATER CHILDHOOD AND EARLY ADOLESCENCE

Developmental sequences of behavior in the 10- to 14-year-range are subject to greater individual variation than those of middle childhood. The developmental tasks for the youth of this period have been listed by Janet Kelley:

1. Coming to terms with their own bodies.
2. Learning new relationships with age-mates.
3. Achieving a degree of independence from the home.
4. Acquiring self-confidence and a philosophy of life.
5. Achieving a degree of adult social and economic status.⁶

THE INHERENT CONTINUITY OF DEVELOPMENTAL TASKS

The challenge of developmental tasks in the growing up process is stronger for the pupil than the appeal of artificially arranged experiences for learners based upon subject matter standards drawn up by adults. The urge to continuity in the fulfillment of these tasks is inherent in development. In reading, for example, the healthy child seeks and selects material at his present stage of reading development and moves irresistibly upward with a pace

⁶ Janet A. Kelley, *Guidance and Curriculum*, Englewood Cliffs, N.J., Prentice-Hall, Inc., 1955, pp. 32-33.

commensurate with the abilities which he has been building out of past experiences with reading. He seeks materials but he also seeks help in perfecting new vocabulary and skills—help from the teacher, help from other children, and help from other adults. Teachers and parents too often have been overly anxious about the continuity of development in reading. This anxiety has in too many cases thwarted the natural and normal continuity of the child's development; such anxiety communicates to the child "no confidence" and other negative manifestations. The process of growth in reading, which could have been created by the child, now may be directed by the adult with the possibility of distortion, and the adventure of reading may become a distasteful task of conforming to adult demands. This is not to say that children should be thrown solely on their own resources or that the only direction of their learning should be self-direction. What is meant should be carefully noted by the teacher and prospective teacher: adults should not step in and make over the pattern of learning within the developmental tasks; the role of the teacher is to guide and assist the learner to continue more efficiently the learning which emerges out of his past and inevitably stretches into his future. Continuity does not have to be created for the child. It already exists in his normal life activities.

Earl C. Kelley points up this principle aptly:

Since all learning is based on the learner's unique experience and purpose, it becomes a question as to what he can learn, not just what he is willing to learn, or what we think he ought to learn.

The idea that *we* can decide what to put in or leave out has done incalculable harm to the development of man as an informed, adequate inhabitant of the good earth. It has caused people to be diverted from learning rather than being drawn to it. It is responsible in large degree for the drop-out problem. . . . It has caused us to think ill of our learners because they *do not do what they cannot*, and has created a barrier between us and our young. When the young have rejected our selections, we have accused them of perversity or being the carriers for evil spirits.

This mistaken view of the nature of knowledge is the breeder of

authoritarianism, and makes democracy in the classroom well-nigh impossible. If we decide what is to be learned, then it becomes our duty to see to it that it is learned. To do this, we have to invent many devices for coercion. When a learner is being coerced by a status leader he can hardly be said to be living democratically. Responsibility for learning is transferred from the learner, where it belongs, to the teacher.⁷

Both from the standpoint of human development and democratic behavior, then, teachers must seek to apply their skill and wisdom to the continuities of learners. Time can be wasted if the teacher does not consult the learner before attempting to lead him into a learning experience. Assuming responsibilities which rob the child of his right and need to engage in responsible behaviors or ignoring the present stage of his developmental tasks means lost opportunities for learning. What teachers typically have sought to impose upon the learner "because it was good for him" too often has been of pitifully little value to the child and to the society within which he is developing.

CONTINUITY IN PERSISTENT LIFE SITUATIONS

EVERYDAY CONCERNs AND PERSISTENT LIFE SITUATIONS

The concept of the curriculum developing as learners and their teacher work together on the problems and interests of everyday living and as these relate to persistent life situations was advanced by Florence Stratemeyer and others.⁸ Persistent life situations are related to developmental tasks and have sequential behaviors spanning several levels of maturation. Learning based on the concerns, or interests, emerging out of persistent life situations tends to have inherent continuity. For instance, the management of money as a

⁷ Earl C. Kelley, "What Dare We Leave Out," *Educational Leadership*, XI, No. 4 (January, 1954), 209-210.

⁸ Florence B. Stratemeyer, H. L. Forkner, and Margaret G. McKim, *Developing a Curriculum for Modern Living*, Bureau of Publications, Teachers College, Columbia University, 1947. See also Florence B. Stratemeyer, Margaret G. McKim, and Mayme Sweet, *Guides to a Curriculum for Modern Living*, Bureau of Publications, Teachers College, Columbia University, 1952.

persistent life situation is traced developmentally by these authors in the following manner:

A 5- or 6-year-old manages money as he goes on an errand to a neighborhood store, decides how much of his allowance to spend on candy, put aside for Sunday School, or save in his bank.

At 8 or 10 the child also meets the same persistent life situation when he buys at the store, shares in decisions about spending family funds, puts money in the local or school bank, repays money borrowed from parents.

At 15 the young person also buys at the store. He decided where to buy so that he can get the best merchandise for his money, what the price differences are on similar materials, what labels on materials mean. His everyday concerns may include budgeting his allowance, deciding whether to ask for a larger allowance, seeking jobs to supplement his allowance so that he can satisfy his needs.

The adult also deals with problems of money management in making purchases and he meets many of the same everyday concerns faced by the adolescent. He deals with larger amounts of money and more complicated situations—deciding when to purchase commodities wholesale, getting information from various agencies for consumer protection, financing a home or a business, providing funds for the education of offspring, providing security for later life.⁹

THE CONTINUING THREAD OF PERSISTENT LIFE SITUATIONS

Whereas the scope of the curriculum, according to this view, lies in the great range and diversity of life situations dealt with, continuity is a characteristic of growing up in these recurring situations. They constitute a "continuing thread" which appears again and again in a variety of circumstances as development moves from childhood to adolescence to adulthood. Characteristic of curriculum continuity within this view are recognitions that:

Children and youth seek to learn those things that their maturity and experience make meaningful to them.

An optimal moment of learning for one person may not be the same as that for another.

Effective learning leads to generalization.

⁹ *Ibid.*, p. 11

In meeting new situations the individual draws upon the generalizations which have emerged from previous experience.¹⁰

The curriculum emerging from the concerns of learners with the activities of daily living, then, is a curriculum continuous with the life of the child. It enriches and interprets that life more effectively for the child, leading to more efficient living within the continuity of development.

CONTINUITY IN THE EVER-EXPANDING HORIZONS OF EXPERIENCE

SCOPE AND SEQUENCE IN TERMS OF EXPANDING HORIZONS

The ever-expanding horizons approach has been used in many places with considerable variation. Perhaps the most intensive study of this approach to scope and sequence of the curriculum occurred during the Delta County Curriculum Project.¹¹ This view of curriculum is similar to the persistent life situations approach, suggesting many units in which these situations are explored by the learner. In addition, it reflects contributions to the curricular design derived from other activities-of-daily-living approaches, especially the factors of social functions and areas of living patterns. In the Delta County Project an attempt was made to integrate the best characteristics of each of these approaches while at the same time defining a rather definite, and yet comprehensive, scope for each grade group. This is not to say, of course, that subject matter standards became the basis for determining what should be taught in a particular grade. Instead, the experiences for each grade were suggested in a large list of experiences or problem projects related to and elaborating upon the theme selected for that grade. Specifically, each grade was assigned a scope or theme within which the teacher and pupils were asked to limit their activities. This "limiting" was highly relative in that it had the

¹⁰ *Ibid.*, p. 18.

¹¹ W. Ray Rucker, resident consultant, The Delta County (Texas) Curriculum Project, sponsored jointly by the Texas Education Agency and the Hogg Foundation for Mental Hygiene, 1952-1953.

effect of focusing a particular grade level group upon a broad area of living with designated horizons. Each year the child saw the horizons for the learning in his group expand to a larger area of living until he reached Grade 8 where the focus returned to himself and his own personal problems. He felt the sense of advancement. Teachers were able to collect classroom materials as they related to the theme for that grade, thus building classroom libraries and other resources in an intensive rather than extensive manner. In this connection, it should be explained that teachers were encouraged to spread out their materials according to reading difficulty and in other respects related to basic skill development.

This curriculum was, then, emergent from the grade theme. The suggested projects under each theme were only illustrative of the kinds of experiences the teacher and students were invited to plan and carry out. All learning activities of the group were initiated by teacher-pupil planning. Individuals progressed at their own rate in the basic skills through the medium of individual contracts which were developed parallel to the group problem-solving activities.

Devotees of the experience curriculum undoubtedly will object to the broad sweep of sequence as that sequence is expressed in the grade themes. Critics of the experience curriculum may take comfort in this limited control of scope and sequence which are expressed as expanding horizons rather than subject matter standards. The Delta County Scope and Sequence follows:

SCOPE AND SEQUENCE OF THE INTEGRATED CURRICULUM FOR GRADES 1—8 WITH SUGGESTED PROJECTS FOR EACH GRADE

Grade 1: *Living Together at Home and at School*

Projects:

1. How People at School Help Us
2. How We Work and Play Together at School
3. How the Family Lives and Works
4. How We Make and Share Toys
5. How We Plan and Carry Out Our Christmas Program
6. How We Dress for the Weather

7. How We Keep Well at Home and at School
8. How We Keep Safe at Home and at School
9. How We Are Protected at Home and at School
10. How We Can Make Our Room Look Better
11. How We Care for Our Pets
12. How We Travel with Our Families
13. How We Prevent Fire at Home and at School!
14. How We Help Others Who Are Hurt

Grade 2: *Living Together in Our Neighborhood*

Projects:

1. How We Work and Play Together in Our Neighborhood
2. How the Doctor, Nurse, and Dentist Help Us
3. How the Grocer, Butcher, and Baker Help Us
4. How the Fireman and Policeman Help Us
5. How We Recognize Signs of Fall
6. How We Get Ready for Christmas in Our Neighborhood
7. How We Recognize Signs of Winter
8. How the Postman Helps Us
9. How the Circus Makes Us Glad
10. How We Recognize Signs of Spring
11. How We Recognize Our Bird Friends
12. How Animals Get Food
13. How Rain Helps Plants and Animals

Grade 3: *Living Together in Our Larger Community*

Projects:

1. How We Live Out-of-Doors
2. How the Air Affects Our Lives
3. How Relics Tell of the Past in Our Community
4. How Roads Serve Our Community
5. How Our Community Celebrates Christmas
6. How the Bank Serves Our Community
7. How Our City Government Helps Us
8. How the Post Office Serves Our Community
9. How the Grocery Store Serves Our Community
10. How the Hospital Serves Our Community
11. How Our Community Celebrates Easter
12. How Our Community Gets Its Water
13. How Indians Who Used to Live in This Region Helped Us

14. How Insects in Our Community Can Be Friends or Enemies
15. How Plants Serve Us
16. How Our Community Provides for Our Health
17. How Our Community Provides for Our Safety
18. How Our Community Gets Its Food
19. How the Telephone Serves Our Community
20. How Cotton Serves Our Community
21. How the Dairy Serves Our Community
22. How Birds Can Be Friends or Enemies
23. How Plants and Animals Grow
24. How We Prevent or Control Fire in Our Community
25. How Heat Changes Things in Our Community

Grade 4: *Living Together In Our State*

Projects:

1. How Present Customs and Landmarks Remind Us of Our Great Past in our State
2. How Transportation Serves Our State
3. How Communication Serves Our State
4. How Weather and Climate Affect Life in Our State
5. How Natural Resources are Conserved in Our State
6. How People Make a Living in Our State
7. How Life and Property are Protected in Our State
8. How Our State Provides for Our Recreational Life
9. How Our State Contributes to the Art, Music and Literature of the World
10. How Citizenship Develops in Our State
11. How Lumbering Affects Life in Our State
12. How Wildlife Affects Life in Our State
13. How Water Supply Affects Life in Our State
14. How Wild Flowers Make Our State Beautiful
15. How Climate Affects Plant Life in Our State
16. How Rocks and Fossils Affect Life in Our State

Grade 5: *Living Together in the United States*

Projects:

1. How the United States Became a Nation
2. How Constitutional Government Developed in Our Country
3. How Our Regard for Human Life Has Helped Build Our Nation

4. How Waterways Helped Build Our Nation
5. How Railroads Helped Build Our Nation
6. How Petroleum Helped Build Our Nation
7. How Electricity Helped Build Our Nation
8. How Air Travel Helped Build Our Nation
9. How Agriculture Helped Build Our Nation
10. How Wars Have Affected Our Nation
11. How the United States Conserves Its Beauty and Provides for Recreation
12. How Our Great West Developed
13. How the Balance of Nature Has Been Upset in Our Nation
14. How the U.S. Weather Bureau Forecasts the Weather
15. How the United States Conserves Its Soil Resources
16. How Refrigeration Has Transformed Life in Our Nation
17. How American Wildlife Is Protected

Grade 6: Living Together in the Americas

Projects:

1. How Old World Peoples Discovered and Colonized the Western Hemisphere
2. How the Indian Heritage Affects Life in the Americas
3. How Old World Cultures Affect Life in the Americas
4. How People Make a Living Throughout the Americas
5. How the Americas Trade with the World
6. How Machines Revolutionized Life in the Americas
7. How Coöperation Has Developed Among the American Nations
8. How Mexico Reflects Indian and Spanish Culture
9. How the Amazon Valley Has Become a New Frontier in South America
10. How Oil Has Developed the Northern Coast of South America
11. How Minerals Are Found and Used in the Americas

Grade 7: Living Together in One World

Projects:

1. How We Look Out Upon the Universe From the Earth

2. How Geologic Times Have Shaped the Surface of the Earth
3. How Land, Sea, and Climate Have Affected Civilization on Earth
4. How Nations Constantly Struggle for Control of the Earth's Natural Resources
5. How the World's Great Religions Have Developed and Affected Life
6. How the Great Empires Have Developed and Died on the Earth
7. How Men Have Struggled for Collective Security and Peace
8. How Geological Times Have Changed the Animal and Plant Life on the Earth
9. How Machines Have Served Man on the Earth
10. How Magnetism and Electricity Affect Life on the Earth
11. How Man Explores the Sea Bottom
12. How We Use the Energy from Sunlight on the Earth
13. How the History of the Rocks Is Read
14. How Man has Developed Weights and Measures Throughout the World
15. How Latitude, Longitude, and Time Are Measured on the Earth

Grade 8: Understanding Ourselves and Others

Projects:

1. How We Get Along With Our Parents and Other Adults in the Community
2. How Biological Changes Take Place in Our Bodies
3. How We Face Reality with Ourselves and Others
4. How We Make and Keep Friends
5. How Food Helps Determine Appearance and Health
6. How We Can Protect Our Own Health
7. How Our Limitations and Strengths Help Shape a Life's Career
8. How We Inherit
9. How People Are Different and Alike
10. How Chemical Changes Take Place in Our Bodies
11. How the Human Body Reacts to Outside Forces
12. How Bodily Fatigue Invites Disease

ADVANTAGES AND DISADVANTAGES OF THE EXPANDING HORIZONS APPROACH

Perhaps the outstanding advantage of the ever expanding horizons approach is its guarantee of a broad, comprehensive coverage of experience and subject matter. Persistent life situations, for example, may not move beyond the immediate environment. So, too, emergent learning experiences may not touch upon some important areas of learning. The ever expanding horizons approach utilizes in its comprehensive coverage of potential subject matter teacher-pupil coöperative planning and problem-solving. The principal disadvantage of the approach is that it may be difficult to relate present concerns of children to the grade theme. In the Delta County Project, the children as well as the teacher understood the limits imposed upon their explorations by the school administration. All appeared to accept this limitation as reasonable. Since not all interests of children can lead to definite learning experiences anyway, this limitation appeared to work well for those teachers who instead of rejecting pupil suggestions could sometimes suggest that the children would be able to explore a particular interest the following year. In many instances, the idea of postponement was readily accepted by children, especially in the face of reasonable alternatives. The idea of organizing experiences around a theme for each grade also helps librarians, supervisors, and teachers to organize the materials and resources of instruction. The circulation of such materials would be facilitated by this type of curriculum organization.

CONTINUITY IN PROBLEM-SOLVING**CONTINUITY IN SOLVING PROBLEMS**

Selection of subject matters for an effective modern curriculum would be a most difficult task from the arm chair, so to speak. The amount of subject matter available to modern man is so vast that several curricula, each entirely different from the other as to con-

tent, could be organized by the scholar for today's young people. The selection of content for the typical pupil is, therefore, quite arbitrary. Who is wise enough to judge what should be selected from the vast array of possibilities? Probably the best answer available is that this selection should not be made for the learner but, with guidance, *by* the learner. The alternative "by-the-learner" has several advantages. In the first place, each pupil learns differently and tends to select subject matter and experience in terms of his own pattern of continuity, i.e., his maturity, interests, and purposes. He will select what he *can* learn and thus avoid wasted efforts of a teacher who might impose learning without consulting the learner. In the second place, the pupil will start in the present, attempting to discover what makes a problem a problem to him in the present. As Earl Kelley says:

The road to the past is from the present, and relevant items from the past can only be selected when the present dilemma is known. This turns the usual operation around. Instead of collecting a large store of known answers before viewing the current scene, and then trying to conjure up the answer which applies, we must start with the current scene, and ask ourselves what we need to know from the past to solve these present problems. This latter process pinpoints learning about the past, so that there is good chance of learning what is needed. When we start with the past, the mathematical chance of having the answer we need when we need it is too small to be operationally sound.

If we are to start with current interests, concerns and purposes of the learner, this obviously implies consultation with the learner as to what is to be learned. The short-cuts to speed up teacher-pupil planning are alluring and deceptive. There is no way to start where the learner is, short of consulting with him about it.¹²

Not only is continuity served by a current problems approach to curriculum development, but also we see in Kelley's words a continuity between problem-solving and the democratic behavior of pupils and teacher in the classroom. Consulting the learner about the problem at hand is both a tactful inquiry as to the level

¹² Earl C. Kelley, *op. cit.*, pp. 211-212.

of proficiency attained by the learner, and a demonstration of the teacher's respect for the individual's thought processes. To have such respect communicated by a teacher is a spur to further effort and self-reliance.

PROBLEM-SOLVING BY INDIVIDUALS AND THE GROUP

Teachers should recognize that problem-solving is pursued by both individuals and groups, and only occasionally by a whole class; therefore, provision should be made for several different problems to be explored within the classroom at the same time. The manpower required for a particular problem is determined by the problem and by the concerns the learners have with the problem. Functional grouping is the only type of grouping which makes any sense in the democratic problem-solving curriculum. Again, who shall work on the problem and how he shall do it are questions which should be put to the learners themselves. Deciding how to group for solving a problem is as much a part of the learning process for pupils as the problem-solving activities themselves.

Typically, learners will prefer to work in pairs or perhaps in three's and four's. Most significant problems are complex enough to require division of labor. It should not be overlooked, however, that the abler pupils may wish to do all of the activities connected with the solution of a problem. Multiple activities are characteristic of the able pupil. Care should be exercised not to label this preference antisocial. It may be the intellectual drive of the pupil which prompts him to work alone. The skillful teacher will find ways to involve such a pupil also in group problem-solving. Every child probably should be encouraged to develop projects which are his alone. And often it is possible to schedule a time when all pupils may be free to work on their individual projects.

The complex problems inherent in the problem project often require considerable division of labor. Occasionally, a whole class may be involved in a complex problem, broken down by analysis into several subproblems. The focus of pupils on subproblems can, for a time, be the same as for an ordinary problem. If units, or

problem projects, cannot be guided by a rather extensive division of labor into 5 or 6 subgroups, each attacking a subproblem which for a time become almost independent problems, probably the class should find a substitute.

THE CONTINUITY OF SUCCESSIVE PROBLEMS

The problems approach to curriculum development has an inherent continuity. This continuity is manifested in the pupil's selection of successive problems, each of which emerges from the last and by the continuity of shared learnings by all children in the classroom. Whether a problem is pursued by an individual, a small group, or by the entire class, much of the learning is assimilated by the children not directly involved in the particular problem. No child in a problems curriculum can hide his "light under a bushel." The results of experimentation and research are shared. The shared results of a problem solution process easily may be the stimulus to another's selection of his next problem for study.

That one problem emerges out of another need not be demonstrated. Freedom for the learner to reject all the possibilities of the emerging problem, however, should be maintained. Sometimes, it is well for the learner to begin again in a strange territory. Continuity may seem to be broken, and yet the need to explore entirely different phenomena may be the sign of significant new growth. Who will not concede this to be a manifestation of the workings of continuity of learning in the individual? Movement to something unfamiliar or adventuresome is a sign of continuity, too. Montgomery expresses well the continuity of problem-solving:

It happens that problems are just as continuous as life or learning. One leads directly into another; no sooner is this one solved or resolved than another is there demanding solution. If you learn how to behave in solving the ones you face today, you are better prepared for tomorrow's. That is what is meant when we say that education is the helping of children to move to something better. The "better," where education is concerned, does not mean getting a Cadillac instead of a Chevrolet, or any other position of status or accomplishment; it means gaining greater ability in your own person to meet your needs,

to keep the on-going process going, to get from every moment of living what it affords for human growth.¹³

It appears, then, that the democratic, problem-solving curriculum has the best inherent continuity. It would give to teachers, parents, and pupils the best hope that learning would not only proceed according to plan and critical thinking, but also that learning need not confine itself to the classroom or take place only when adults are standing over the learner with a whip. Continuity of learning in out-of-school situations is to be expected. Homework should increase through the desires and self-direction of the learner when motivated by the problems he has undertaken to solve. Continuity with or transfer to other learning situations as well as permanent retention should be improved. On this point Walter W. Cook is quoted saying in 1954: "Although deterioration is the rule when factual tests are repeated, it has been shown that tests of problem-solving ability, reading comprehension, the application of principles to new situations, organizing ability, and the interpretation of new data, measure permanent learnings. That is, meaningful structured learnings involving problem-solving and application abilities are relatively permanent."¹⁴

The problems which incorporate curriculum continuity contribute to permanency in learning. If learning can take the first time and contribute to the permanent effectiveness of the pupil in the future, much valuable time will have been saved. In the long run, it is these permanent learnings which make the educated person.

DISCONTINUITY IN THE AUTHORITARIAN, LOCK STEP SYSTEM

One of the strangest arguments presented by critics of several modern curriculum designs is that sequence and continuity of learning is best preserved in the traditional school which adheres to a systematic course of study. This assumption is both naïve and

¹³ Ray Montgomery, "John Dewey and Continuity of Growth," *The Phi Delta Kappan*, March, 1953, pp. 216-217.

¹⁴ Alice V. Keliher, "How Slice the Cake?" *Educational Leadership*, XIV, No. 7 (April, 1957), 421.

false. The opposite and well-founded argument is supplied by the 1958 Yearbook of the Association for Supervision and Curriculum Development:

The potentialities for any kind of continuity in learning seem rather doubtful in a curriculum that has been preplanned by adults to be mastered by children block by block. This would not mean, however, that the teachers and the school environment are not important in helping children see and set their goals. It would seem that large problems rather than segments of subject matter would offer learners greater opportunities for individual and group participation of a variety of kinds on a variety of developmental levels. Solving problems of real concern to them requires children to see relatedness among various subjects.¹³

The only true continuity in learning is the continuity of the individual. It is the obligation of American schools to help the individual develop continuously at a level of performance commensurate with his maturity and unique potentialities. In order to achieve this most important end, much conformity to group situations which envelop the child in school should be eliminated from the curriculum. The task is not to try to fit the child into a preconceived curriculum, but to fit a curriculum to the child, provided too, of course, that the child has a hand in the fitting!

SUMMARY

A teacher cannot give continuity to the learning of children. Continuity in learning is an individual matter most directly related to self-direction and self-appropriation. A systematic scope and sequence of subject matter does not guarantee continuity; it may, in fact, interrupt the natural continuity of an individual's learning. The school curriculum can provide an organized environment which is more conducive to continuity in learning than the subject-centered design. These *improved types of organization* are designs for (1) aiding the child in meeting developmental tasks, (2) building experiences around persistent life situations, (3) providing an exploration of the ever widening horizons of the world and its

¹³ Association for Supervision and Curriculum Development, *op. cit.*, p. 201.

culture, and (4) providing for the continuous pursuit of individual and group problems.

The approaches to organization and continuity correspond. Each provides an emphasis somewhat different from the others, and yet, unlike the traditional curriculum patterns all stress organizing situations in which the individual may participate in determining the continuity of his own learning.

Selected Readings

Association for Supervision and Curriculum Development, *A Look at the School Program*, 1958 Yearbook, Washington, D.C., Association for Supervision and Curriculum Development, NEA, 1958.

Dewey, John, *Democracy and Education*, New York, The Macmillan Co., 1916.

Dewey, John, *Experience and Education*, New York, The Macmillan Co., 1938.

Herrick, Virgil, and Tyler, Ralph, *Toward Improved Curriculum Theory*, Supplementary Educational Monograph No. 71 (March, 1950), Chicago, University of Chicago Press, 1950.

National Society for the Study of Education, *The Integration of Educational Experiences*, Fifty-seventh Yearbook, Part III, Chicago, University of Chicago Press, 1958.

CHAPTER 6

Evaluating and Reporting Pupil Progress

In far too many schools, pupils are still adjudged on the basis of all pupils attaining identical, predetermined goals for a course of study in their particular grade. In such schools, the "lazy" or "dumb" pupil receives painful judgment, and although attempts may be made to adapt the instructional program to the child, the evaluation procedures, as well as the assumptions underlying them, still reflect the tradition of subject-centered and lock step schools.

THE PURPOSE AND FUNCTION OF EVALUATION

AN INTEGRAL PART OF THE LEARNING PROCESS

The learner constantly evaluates his trials and actions in learning. He strives to know the meaning of situations confronting him, ponders his attempts to improve his skills in practice situations, and win the favorable responses of others. His evaluation is connected with his own idea of the improvement in his behavior required by the situations within which he learns. When children learn together in a group activity, they evaluate together the things they do in common, but they evaluate separately their more personal reactions. The teacher joins in the group evaluation and helps each individual to evaluate himself more efficiently through demonstrating a warm personal interest in his work and helps him arrive at a knowledge of the consequences of his actions.

Essentially, evaluation takes place when the learner pauses in his

work to say to himself: "Is this helping me to go where I want to go?" or "Is this turning out the way I planned?" or "Is this one better than the one I did yesterday?" or "I wonder if he was hurt by what I said." These are typical of the specific questions which may arise in the evaluation process. Measurement specialists speak of the measurement of performance against an educational objective or goal. The above questions are manifestations of goals in the mind of the child; however, these questions reflect the specific and immediate concerns of the child which are not always verbalized. The teacher can help guide evaluation by bringing such questions out into the open where they are often faced more resolutely and lead to observable improvement.

Evaluation, then, is a vital part of the learning activity which determines whether the learner will recognize and practice improved responses. Evaluation is the threshold to the next step in learning and not a final judgment. Although evaluation may be participated in by the teacher, it is most significant as an activity of the learner himself. It is more important that the child know what is right or wrong about his behavior than that others know it, and the teacher's role in the evaluative process is, again, to help the child see more objectively and realistically his progress detail by detail. This teacher guidance of evaluation includes helping the child set goals of achievement for himself, the better to see clearly the progression of his improvement. In the use of an evaluative frame of reference in all his learning and seeking, the learner goes about his work more intelligently and with greater and greater efficiency.

Instruments to refine evaluation are created by children and teachers as they plan and organize activities, especially those of a problem-solving nature. These planning sessions, whether individual or coöperative, lead to the development of check lists, charts, work standards, criteria for interpreting information, and classifications for data. Activities and subject matter are constantly checked against the questions or goals which the group or individual set up in the beginning of the learning quest. The development of tests may emerge from these processes. These may be pupil-

made tests or teacher-made tests, but ideally, these tests are built by the coöperative efforts of pupils and teacher.

CONTINUOUS WITH THE LEARNING PROCESS

If evaluation is integral with learning, it will be continuous with learning. Since it is a process through which learning is made more efficient, it will become a conscious activity of the learner throughout his learning experience. When evaluation is a continuous and conscious activity of the learner, the pupil *need not be told that he has learned* except for the emotional rewards attending the teacher's acknowledgment. Evaluation is aided by the confirmations of others but the pupil should not have to be told that he has learned in the first place. The learner is indeed fixated in a dependent role if he must rely on the teacher to perform the evaluation of his learning. Curriculum design has a great deal to do with whether the child will become a self-evaluating learner or await the periodic judgments of the teacher. The authoritarian curriculum does not provide for continuous evaluation by the learner. It emphasizes, instead, uncritical learners who depend upon others for evaluation. This evaluation by others is necessarily periodic and not integral with the activity of the learner.

In democratic curriculum design, the teacher participates in the evaluation going on in the learning process. The evaluative behaviors of the teacher are interactive with those of the learner. Since the observations and guidance of the teacher must be continuous in such a curriculum design, the participation of the teacher in evaluation likewise is continuous. The teacher also will use more formal and periodic evaluative procedures to consolidate the total picture of a child's progress; however, the emphasis in modern elementary school classrooms is upon the daily and continuous evaluation of pupil performance.

DIAGNOSTIC RATHER THAN JUDICIAL

Traditionally, evaluation has been a teacher behavior almost exclusively. The process of evaluation often was considered by teachers as a part of the necessary evil of determining grades.

The process was primarily judicial not diagnostic. The teachers constantly were on the alert to catch the pupil in an error, to justify a lower mark, to threaten punishment for unseemly behavior, or to motivate the hapless pupil to work with more industry. The pupil usually "handed in" to the teacher an assigned piece of work. It was understood by all that the pupil must do his best on the first trial, say for example, in writing a report or an original story. Seldom were second or third drafts allowed. Too often, the assumption was not that the pupil "handed in" the paper for the help he could get from the teacher in constructive comments. Instead, he knew he was to be judged by this paper, perhaps to have the creative feeling he had about it dashed (in all too many cases), and to see a mark stamp it finis and break the continuity of his thinking about it. Probably, the system of marking prevalent in most schools is the most effective wrecker of developmental processes in the learning of the individual. Certainly it presents a road-block to sustained creativity by children. This is due to the simple, observable fact that many teachers evaluate in a judicial rather than a diagnostic manner.

A teacher's concept of evaluation and his role in it often does not correspond with his knowledge and concern with child development. When evaluation is not separated from the learning process, the teacher will see clearly that evaluation is another way of promoting the growth of the child in all areas. The traditional marking system often is imposed upon the teacher by the school system and, in such cases, the teacher has no choice but to react accordingly. However, the professional teacher in such circumstances realizes that such a marking system is purposeless in the learning process and can even be unfavorable. The obligation of the teacher is to practice a diagnostic role in evaluation and whenever possible deemphasize the comparative marking system with its misleading symbols.

BASED ON MULTIPLE SOURCES AND TECHNIQUES

The ways by which children exhibit their learnings vary tremendously. A single instrument or technique should not be used

to measure the performances of vastly different children. A comprehensive view of evaluation techniques used by competent elementary school teachers has been adapted and set forth below.¹

| <i>Behavior to be evaluated</i> | <i>Continuous Evaluation</i> | <i>Periodic Evaluation</i> |
|--------------------------------------|--|---|
| Participation in group process | Group discussion, observation of pupil interrelationships | Sociograms, check lists |
| Responsibility and social obligation | Anecdotal record, observation of help pupil gives others, observation of work habits | Interviews with pupil and his work group, appraisal of work products, comparison of individual's goals with his accomplishments |
| Critical thinking | Observation of pupil's problem-solving process, group discussion, written and oral communication | |
| Attitudes and interests | Anecdotal records, observation, diaries and logs | Standardized tests, check lists |
| Concepts | Observation of use, communication in group process | Tests |
| Functional information | Discussion, samples of work | Tests |
| Work-study skills | Samples of work, observation of use, group discussion | Tests, check lists, proficiency in handling specific tasks |
| Silent reading | Summary of content, questions and discussion, following instructions, dramatizing | Creative writing, oral reading, standardized and teacher-pupil made tests |
| Spelling | Use of words in writing activities, continuous word study list | Tests |
| Arithmetic | Problem-solving activities, construction activities | Tests (standardized and teacher-pupil made) |

¹ John U. Michaelis, *Social Studies for Children in a Democracy*, 2nd ed., Englewood Cliffs, N.J., Prentice-Hall, Inc., 1956, pp. 398-401.

This manifold approach is both continuous and periodic. Implicit in the evaluative techniques listed is the question: "What types of experiences help the child develop specific behaviors?" It is joined by another: "How can teachers find out when a child has developed the behavior?"

Not only should the evidence gathered by such evaluative procedures be as comprehensive as possible but also this data should be organized and summarized into a cumulative record. This cumulative record should be built continuously by each teacher. It passes on with the child to the next teacher. It provides a basis for longitudinal interpretation of the progress of the child. It would aid the teacher or counselor to form a complete case study on children who appear to have unusual problems requiring intensive study. The cumulative record is a composite view of the growth of the child as he progresses through school, and as a basis for reporting his progress to parents, it is far superior to the traditional report card. The information contained in the cumulative record of progress should be used in intelligently planned teacher-pupil-parent conferences.

INSTRUMENTS AND RECORDS

READINESS AND DIAGNOSTIC TESTS

Tests are sometimes useful in determining the desirable next step in teaching and in ascertaining pupil strength and weakness in a particular curriculum area. Intelligent teaching cannot proceed for long without reference to basic diagnostic data derived from a minimum standardized testing program and from teacher constructed pre-tests. It should be emphasized here that standardized achievement tests are to be used primarily for diagnosis. The use of these standardized instruments to determine pupil marks cannot be justified, and it is a naïve administrator who judges a teacher by the performance of his pupils on such tests. Direct teaching to aid pupils to make better scores on standardized tests is indefensible and stems from a poor orientation of the whole testing program.

It is wasteful to attempt to teach children what they already know or what it is impossible for them to learn because of immaturity. A sound testing program will aid the teacher in knowing where the individual pupil is in his sequence of development in each area of instruction. The readiness test will help the teacher determine whether the pupil has sufficient maturity and experience to undertake an activity. The diagnostic test will aid the teacher in determining how instruction has affected the learning of the child and where teaching and learning should be improved. The larger diagnostic picture, however, is constructed in part from data derived from such basic instruments as the intelligence or scholastic aptitude test, the sociogram, and the interest inventory. Another significant part is added by case studies, interviews with parents, behavior records, personality tests, and social worker reports.

A systematic plan should be devised to guide the administration of the readiness and diagnostic testing program. Achievement batteries should be administered at least once each year and at the same time each year, preferably early in the school year. The data obtained from the achievement battery should be made available to teachers at the earliest possible moment to aid their planning of the teaching program for each child. Another battery may be administered in the last month of school to determine the gains pupils have made in particular concepts and skills. The fall administration of the battery is by far the more important for the role it plays in instructional planning, an important function of the testing program.

Beck, Cook, and Kearney suggest that the fall testing program has the following advantages:

1. The results will not be used to determine promotion or non-promotion.
2. Teachers do not feel they are preparing pupils to pass examinations at the end of the year.
3. The tendency to drill pupils only in the learnings to be tested will be reduced.
4. It discourages administrative officers from rating teachers on the basis of their pupil's performances on the tests.

This manifold approach is both continuous and periodic. Implicit in the evaluative techniques listed is the question: "What types of experiences help the child develop specific behaviors?" It is joined by another: "How can teachers find out when a child has developed the behavior?"

Not only should the evidence gathered by such evaluative procedures be as comprehensive as possible but also this data should be organized and summarized into a cumulative record. This cumulative record should be built continuously by each teacher. It passes on with the child to the next teacher. It provides a basis for longitudinal interpretation of the progress of the child. It would aid the teacher or counselor to form a complete case study on children who appear to have unusual problems requiring intensive study. The cumulative record is a composite view of the growth of the child as he progresses through school, and as a basis for reporting his progress to parents, it is far superior to the traditional report card. The information contained in the cumulative record of progress should be used in intelligently planned teacher-pupil-parent conferences.

INSTRUMENTS AND RECORDS

READINESS AND DIAGNOSTIC TESTS

Tests are sometimes useful in determining the desirable next step in teaching and in ascertaining pupil strength and weakness in a particular curriculum area. Intelligent teaching cannot proceed for long without reference to basic diagnostic data derived from a minimum standardized testing program and from teacher constructed pre-tests. It should be emphasized here that standardized achievement tests are to be used primarily for diagnosis. The use of these standardized instruments to determine pupil marks cannot be justified, and it is a naive administrator who judges a teacher by the performance of his pupils on such tests. Direct teaching to aid pupils to make better scores on standardized tests is indefensible and stems from a poor orientation of the whole testing program.

It is wasteful to attempt to teach children what they already know or what it is impossible for them to learn because of immaturity. A sound testing program will aid the teacher in knowing where the individual pupil is in his sequence of development in each area of *instruction*. The readiness test will help the teacher determine whether the pupil has sufficient maturity and experience to undertake an activity. The diagnostic test will aid the teacher in determining how instruction has affected the learning of the child and where teaching and learning should be improved. The larger diagnostic picture, however, is constructed in part from data derived from such basic instruments as the intelligence or scholastic aptitude test, the sociogram, and the interest inventory. Another significant part is added by case studies, interviews with parents, behavior records, personality tests, and social worker reports.

A systematic plan should be devised to guide the administration of the readiness and diagnostic testing program. Achievement batteries should be administered at least once each year and at the same time each year, preferably early in the school year. The data obtained from the achievement battery should be made available to teachers at the earliest possible moment to aid their planning of the teaching program for each child. Another battery may be administered in the last month of school to determine the gains pupils have made in particular concepts and skills. The fall administration of the battery is by far the more important for the role it plays in instructional planning, an important function of the testing program.

Beck, Cook, and Kearney suggest that the fall testing program has the following advantages:

1. The results will not be used to determine promotion or non-promotion.
2. Teachers do not feel they are preparing pupils to pass examinations at the end of the year.
3. The tendency to drill pupils only in the learnings to be tested will be reduced.
4. It discourages administrative officers from rating teachers on the basis of their pupil's performances on the tests.

5. It tends to test the more permanent learnings which persist during the summer vacation.
6. It gives the teacher definite information on the performance of pupils, aids in instructional planning, and furnishes a sound basis for groupings within the class.²

INTELLIGENCE OR GENERAL SCHOLASTIC APTITUDE TESTS

While the achievement testing program is used primarily for diagnosing and predicting pupil proficiency in the basic areas of the curriculum, the problem of whether a pupil is performing up to his potential is best attacked by general scholastic aptitude and special aptitude tests, the data of which should be compared with the individual's achievement profile. General IQ scores are of little help in this respect. However, a profile of the various factors measured in intelligence tests such as numerical reasoning or vocabulary will show some relationship with achievement in the corresponding curriculum areas. The testing movement has not advanced to the point where a one-to-one relationship may be perceived between performance in the various instructional areas and the various factors of academic intelligence. Progress in this direction is to be devoutly hoped for; however, an effort should be made, with ample professional caution, to evaluate pupil progress in terms of the differential between pupil achievement as measured by standardized achievement tests and pupil potential as measured by intelligence or general scholastic aptitude tests. As imperfect as present tests are, teachers need to study this differential between achievement and potential if there is ever to be a professional basis for marking pupils in terms of individual progress goals instead of on a comparative basis with all the other pupils in the group. Included in this newer pattern of evaluation will be the encouragement of pupil self-determined goals and self-appraisal as well as the discouragement of mass assignments, mass achievement examinations to determine marks, and unfair competition in the classroom.

² Robert H. Beck, Walter W. Cook, and Nolan C. Kearney, *Curriculum in the Modern Elementary School*, New York, Prentice Hall Inc., 1953, pp. 190.

Intelligence tests have been misused in many places with perhaps too much *naïve faith in their ability to predict achievement*. Havighurst summarized findings of research on intelligence tests and suggested that teachers should bear in mind these three points:

1. The general IQ gives the teacher an idea of the level of learning ability to expect in the child. However, it is an average of several different types of learning ability. The child often differs widely in these specific abilities which make up his general academic intelligence.
2. Scores of an individual on a nonverbal test of intelligence may be quite different from those attained on a verbal test of intelligence.
3. Children who are *not* from American middle class families suffer a disadvantage in taking the ordinary intelligence tests usually administered in American schools.³

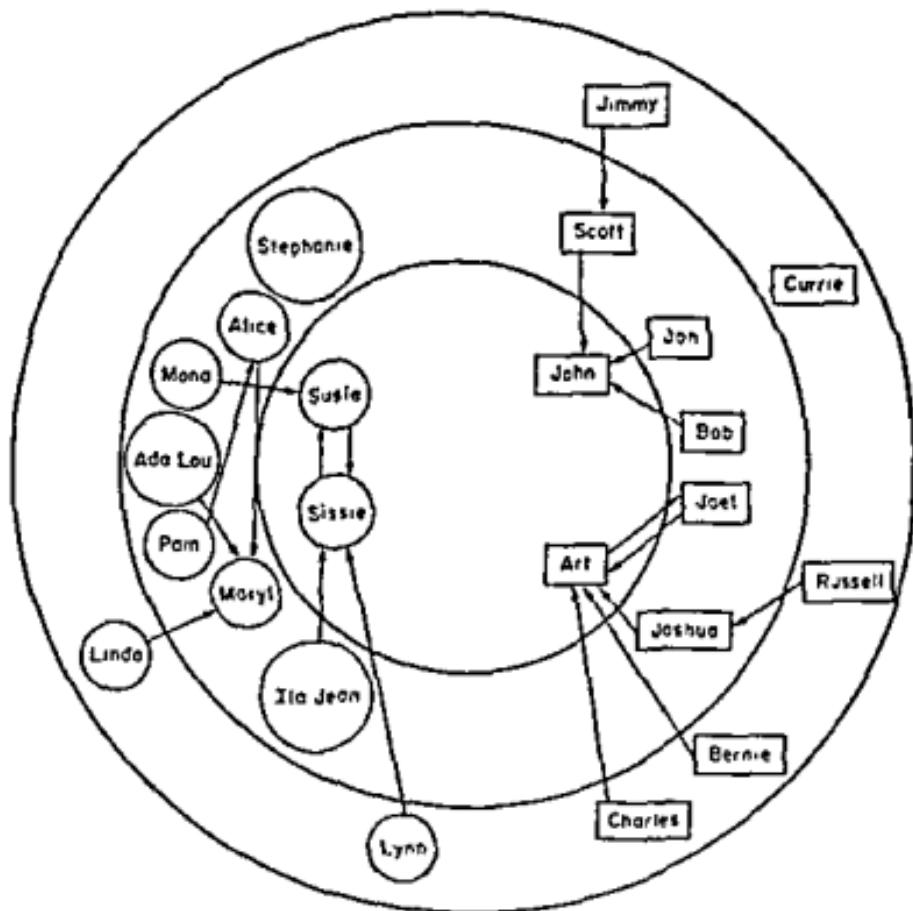
Therefore, mechanical applications of test scores to evaluation situations should be avoided. Teachers should supplement the data which all available instruments can secure for them with their own direct observation and good common sense. The objective is not to strive for an elusive perfection of measurement but to help orient the individual child toward self-direction and self-evaluation in terms of his own individual curriculum.

THE SOCIOGRAM

The sociogram is a diagram of the social preferences of the children in a classroom. The data for its construction is obtained by asking children to write on a slip of paper the names of those they would like most to be with as they go about their class activities. These first and second choices of friends are shown in the continuous lines which are drawn from one child to another. The boys may be represented by a rectangle and the girls by a circle. Parallel lines indicate a mutual choice.

Before the teacher constructs the diagram, he notes the number

³ Robert J. Havighurst, "Using the IQ Wisely," *NEA Journal*, XI, No. 13 (November, 1951), 340.



Sociogram of an 11-Year-Old Group

TALLY SHEET FOR THE SOCIOGRAM

| | First Choice | Second Choice | Total | | First Choice | Second Choice | Total |
|-----------|-----------------|------------------|-------|----------|-----------------|------------------|-------|
| Stephanie | 0 | 2 | 2 | Lynn | 0 | 0 | 0 |
| Susie | 2 | 2 | 4 | Bob | 1 | 0 | 1 |
| Art | 4 | 0 | 4 | Ila Jean | 0 | 2 | 2 |
| Pam | 1 | 0 | 1 | Maryl | 2 | 0 | 2 |
| Scott | 2 | 0 | 2 | Alice | 2 | 0 | 2 |
| Linda | 0 | 0 | 0 | Jimmy | 0 | 0 | 0 |
| Charles | 0 | 0 | 0 | Joel | 1 | 2 | 3 |
| Joshua | 2 | 0 | 2 | John | 4 | 2 | 6 |
| Ada Lou | 1 | 0 | 1 | Sissie | 3 | 1 | 4 |
| Jon | 1 | 0 | 1 | Russell | 0 | 0 | 0 |
| Bernie | 0 | 0 | 0 | Mona | 0 | 1 | 1 |
| Currie | 0 | 0 | 0 | | | | |

of times a particular child is chosen on a separate tally sheet. Those who are chosen most are placed in the center. Those not chosen are easily seen in the outer circle. The teacher is primarily interested in what these data show about the social acceptance or status of the children. If no one chooses an individual, the teacher will list him as a tentative isolate who may need special help in making friends or achieving status in the group. If a small circle of friends tend to choose each other and to have few contacts outside these intimates, the teacher may recognize the existence of a clique and realize that these particular children need broader contacts with the other children. This may be accomplished during the initiation of a new unit by guiding the organization of activities so as to redistribute these children among working groups. It would be a mistake to allow these children to work together in the same committee for an indefinite period even though they work well together. Children not only need to be accepted by other children but also they need to learn to accept others and to adapt themselves to many varied human relationships.

While collecting the data for the sociogram, the teacher makes it clear that the information is to be kept confidential. He uses the data in putting together the larger diagnostic picture of each child. The feelings of the children should at all times be protected, and pupil questions relative to the use of the information should be met with a matter-of-fact and casual, "It is for me and no one else."

The data from any sociogram is limited in its application. It may be valuable in identifying the isolates and confirming the teacher's own observations about children who lack a feeling of belonging. For many of the children in the class group, it may have no special or significant message to tell. When used with other devices and techniques, the sociogram is valuable. When taken too seriously, it may take the naïve teacher too far. It should be supplemented with direct observation, case studies for the isolates and mysterious ones, and continuing anecdotal records. Armed with data from multiple approaches to particular problems, the teacher may approach a teacher-parent interview with some professional deportment.

ANECDOTAL AND BEHAVIOR RECORDS

Anecdotal and behavior records are written records of events in the school behavior of children. The former are the more comprehensive, taking in all types of behavior, including performance in academic studies. Behavior records usually are limited to those incidents or experiences which reflect problems of discipline or mental health. The difficulty with either type is that these records may become an undue time-consuming burden to the teacher. Caution should be exercised to see that only significant events are recorded and that all are described in a most direct, brief way. For instance, all statements of opinion should be eliminated from these records. The interpretation of the data should come at a later time when a longitudinal view of the behaviors of a child may be seen by the teacher or counselor. If only the facts of a behavioral situation are presented in the records, brevity is maintained. Professionally written anecdotal records should become a part of the cumulative record of the child passed on from teacher to teacher. Although this practice of making a record of behaviors, which may be outgrown or reflect a transition in growth, involves an element of risk when executed by an inexperienced teacher, in the future professional teachers must have a more complete longitudinal view of the child if they are to guide pupils toward individual progress goals and optimum development.

Typical of the statements which may appear in a professionally oriented anecdotal record of a child are the following:

"Ann kept her head down on her desk most of the day and refused to work. She stayed near the building exit during recess and did not play with or talk to anyone."

"Ann has persisted in her withdrawing behavior all week."

"In a conference after school, Ann told me her mother was ill and that her father had wept about it."

"I called Ann's father at his place of business today. Mrs. Bronson will not get well. No change in Ann's behavior."

THE CASE STUDY

It is not necessary for a teacher to make a comprehensive case study of each child in the classroom. When a child is progressing as expected in academic studies and is reasonably happy in his social relationships, there is no need to involve the valuable time of the teacher in the time-consuming labor of collecting data and undertaking analysis which the case study demands. It would be better to develop case studies when the need arises. A child who does not achieve as well as expected and does not respond to ordinary instruction is a worthy subject for a comprehensive case study. All emotionally disturbed children should become the subjects of a case study. In short, children in trouble should be studied intensively; case studies for all children would be impractical if not impossible for a busy teacher.

Case studies vary in their scope and depth according to the training of the individuals preparing them. If such personnel as school social workers or psychologists are available, they should be responsible for the case studies of disturbed children, since the etiology of their problems can be most complex. But in the absence of trained guidance people, an effort on the part of the teacher is wholly preferable to ignoring the problem or attempting to control the child without understanding him. Naturally, a teacher-executed case study will not approach the completeness of a case study made by a guidance specialist, but it can throw some light on the matter. The teacher must recognize here that attempts to obtain information about the home experiences of the child may be met with suspicion and rejection on the part of the parent. The social worker, psychologist, or guidance counselor can approach the home in a special role, and his relationship with the family will not complicate the role of the teacher.

Basically, a case study has five main parts: (1) statement of the problem, (2) the facts, data, and history to be collected, (3) an analysis of the data, (4) possible solutions to the problem, and (5) recommended action. Even a case study exemplifies the problem-solving process as applied to child study.

In practice, case studies done by an untrained person never adhere to the neat pattern outlined in the preceding paragraph. Even the statement of the problem as seen by the teacher may change as the study progresses. All the other parts are continuous and overlap in both directions. Any particular action of the guidance worker may well be applicable to all five parts of the study. Summarizing a case study frequently follows the temporal sequence of events; this, in general, was done with the samples presented here. It would be possible to analyze these studies in their parts, but that is beyond the scope of this chapter. It should be noted that the word "case study" may have two meanings: it is the process of studying a child and it is also the written record or summary of such a study.

Of the three following illustrative case studies, the first two were executed, recorded, and summarized by social case workers in the capacity of school social workers. The third study was executed and summarized by a guidance counselor in the upper elementary grades, condensed by the author. All three guidance workers were on the staff of the Guidance Department of the Tucson (Arizona) Schools.

CASE NUMBER 1

This was the case of a child with quite severe emotional difficulties which were causing concern to the school and to his parents. The improvements in this child's adjustment to his school environment and in his family relationships were the result of the parents' eagerness for case work help and ability to accept it, together with the school's understanding and coöperation. The child himself was given no case work help directly.

Michael, a 7-year-old of Grade 1, was referred by his teacher because he was "undisciplined, unable to get along with other children, and made no effort to take part in the classroom work." In conference with the principal, it was learned that the school was very concerned about Michael. He upset his classmates by burping continually in class and in the lunchroom. He brought first a knife, later a razor blade, to school. In observing Michael in class and in conferring with

sive measures with Michael in his way, she was also doing this in a different way. She had always kept him close to home, fearful that he might fight with other children. She expected him to be perfect in behavior, to be much more mature than his years, and never to show any anger or disrespect to her. For example, at meals he had to eat everything on his plate, although his sister had to be coaxed, and was allowed to eat what she wished. Michael also had to watch the family eat desserts, etc., while he was on his strict diet.

In the interviews with the father, although he repeatedly stated that the children should be raised as strictly as he was, he too was very anxious for help for his son. He was unable to follow suggestions for ways in which he could give Michael more of his attention and companionship, and later he himself brought up the fact that in this way he would be helping counteract the possibility that Michael's past closer association with his mother had made him a little effeminate. As interviews progressed, the father talked of his jealousy of his brothers and sisters for his father's affection, and then brought out the possibility that Michael might be feeling the same way with regard to his sister.

As the parents began to see how their relationship with Michael and his sister had been affecting Michael, they wholeheartedly did everything they could to help him.

The school was very interested in the work with Michael and his family. It was planned with his teacher and principal that no pressure was to be brought to force him to conform, but when he became extremely upset, he was to be temporarily isolated from the class.

As work with the family progressed Michael began to adjust better in school. There were no more episodes of burping, or bringing knives to school. He began to make friends with the other children, was able to take part in the work, and his hair began to grow out. He passed to Grade 2.

During the summer the mother had to be away for a time. She and her husband decided she should take the daughter, but that Michael should stay with his father so that they could have a period of establishing a closer relationship. They both related that this had been a very happy time for Michael and his father.

During the present school term Michael has continued to get along well in school and at home. The principal states that he is "100% improved." His present teacher states that she is unable to believe the

school's reports that he was such a maladjusted child last year. He is happy and at ease in class, is in the most advanced reading group, and his appearance is that of a normal child.

CASE NUMBER 2

Terry entered the fifth grade in the Tucson Public Schools in fall of 195—. His teacher immediately discovered that his was a serious reading disability; he was reading poorly at the pre-primer level. A referral was made to the Guidance Department and a psychological test was administered. He was found to have normal mental ability. His verbal responses in class discussions and his conversations also indicated no mental retardation. The school nurse checked hearing and vision and found no appreciable disability (vision was 20/30). The family physician found him to be physically well.

The psychologist referred the case to the case worker because she suspected emotional factors in his reading disability. Terry's father became almost totally blind in an accident within a year or so of Terry's entrance into Grade 1. The boy developed learning problems at once and had to repeat Grade 1.

Conferences with the parents and boy and observation of the boy in the school lead us to feel that Terry was very well adjusted and just needed some good remedial teaching. His teacher conferred with her grade supervisor, and worked out a reading plan for Terry. In late winter a private tutor gave him one lesson a week and passed on materials to the teacher. Terry tried very hard but made only a slight progress from time to time. Terry was well accepted by his group and presented no social adjustment problems. He was enrolled in the University of Arizona summer reading clinic in 195—. He received help in the kinesthetic method of reading but gained only slightly in this very slow process. His reading activity indicates alexia, or word blindness.

In the fall of 195— he moved on to Grade 6 with his chronological age group; the special reading program continued in class and with the tutor; and the mother read all assignments to him so that he could participate in the class discussions. He was able to do his arithmetic if a student or teacher would read his word problems to him.

During the following summer, the case worker conferred with teacher, supervisor and tutor, and found that while this boy had made progress from time to time, there was no permanent gain. A con-

sultation was held with the psychiatrist at the Tucson Child Guidance Clinic, and it was decided that this boy might profit from psychotherapy. The parents wished this and treatment began at once.

The following fall Terry went on to junior high school with his class. The case worker called a case conference with all his teachers, the counselor, principal, and curriculum coördinator so that they might understand this boy's special problem and work out plans for whatever participation he can have in class activities.

To date, this is working well. There is little or no chance that the reading facilities we are able to provide will improve the reading disability, but while he is in public school we hope to help him maintain good mental health and to discourage any possibility of his becoming a liability as a citizen.

If he goes on to high school, we will need to work out a special program, probably only in the performance area such as is found in the vocational shops. He will not be able to fulfill the requirements for graduation from high school unless some drastic change develops in the course of treatment. The case worker is preparing the family to accept these possibilities.

CASE NUMBER 3

Tom Jones came to my attention when he played truant shortly after being enrolled in —— Junior High School from a parochial school. While visiting the home to investigate his continued absence from school, I learned that Tom had been in trouble before. Mr. Jones was extremely upset, and made many threats about punishing Tom when he came home that afternoon. The following day Tom attended school, and he and another boy, José M——, were observed bringing new clothing boxes from a store with them. Before attending class, they took their boxes into a rest room and emerged dressed in new pink trousers and pink sweaters. Upon being questioned separately about their source of money for these purchases, they gave conflicting stories. The parents were asked to come to the school.

School History. Tom is 13 years old and in Grade 7. He attended Grade 1 in a parochial school, Grades 2 and 3 in two different public schools, and Grade 4 through part of Grade 7 in still another parochial school. He was expelled from the latter for misbehavior. His work was rated average throughout his school

career. Strangely enough, he was rated superior at his last previous school for "prompt and willing obedience."

Academic Ability. Intelligence tests show average ability, and achievement tests show average to very superior performance in subject matter areas.

Interests. This year Tom joined the "Y" and carried off high honors in swimming, and he joined a social club, but soon lost interest and dropped out of both. He was punished for smoking on the school premises, played truant often, and engaged in other activities against the rules. He was in many fights and gained the reputation of being a very tough boy, which he apparently liked. He did show some interest in the possibility of teaching swimming to underprivileged children during the summer.

Physical Health. Generally good, except for a cyst on his arm, which was removed by surgery. However, during the last two months of school, he was frequently absent due to illness.

Home and Family. Tom had two sisters, aged 16 and 9. Both parents ordinarily work, but Mr. Jones was convalescent following an ulcer operation at the time of my first contact with the family. The 16-year-old sister worked as a cat hop, but was forced to stop by illness. All but the youngest child were chain smokers. The father and mother drink to excess. Religion is Catholic, but the mother resented church authorities for what she regarded as unfairness in Tom's school expulsion.

Consideration of Tom's Problem. When Mr. and Mrs. Jones came to school in connection with the new clothes, both were extremely angry. Mr. Jones expressed great intolerance of Tom's friend, José, and of all Spanish Americans. Mr. Jones promised to bring Tom to school and pick him up afterward.

There began a long period of truancy and running away from home by Tom. On one occasion he spent several days with his sister's boy friend, who later told me that he had given the boy's money for the clothes, although there were several inconsistencies in his story. Tom was in trouble with the law twice, once for breaking into a lunch-room with a gang of boys and once for breaking car windows. Both times he was let go with a warning. He was away from home, and, of course from school, for periods of up to two weeks. Two times Mr. Jones attempted to take him to a new place for a fresh start but on neither occasion was he successful in carrying this out. Mr. Jones was

considering asking the priest to help him get Tom into a Catholic boys boarding school when a neighbor offered to keep him. This lasted six weeks, during which the truancy diminished, and ended when Tom's operation was necessary, following which he returned home.

During the time he lived with the neighbor, Tom developed a pattern of school absence based upon some vague illness. He refused to take Physical Education classes because he had no gym suit, and claimed that the family couldn't afford to buy him one.

During the last two months of school, when Tom was living at home, he did good school work, but he missed a great deal of school because of his own and his sister's illness. His father resumed work, so neither parent was at home during the day.

The Counselor's Activity. I had many conferences with Mr. and Mrs. Jones, both together and individually. I tried to help them face the causes of the conflicts which led to Tom's truancy and running away from home. Each parent blamed the other. According to the father, Mrs. Jones "was always yelling at the children;" according to the mother, Mr. Jones was too indulgent. It was discovered that the older sister had once been seriously delinquent also.

I changed Tom's home room twice during the year in an effort to find a group into which he would fit; this was largely unsuccessful. In sessions with Tom, I tried to help him understand his own actions and see the consequences of them. I urged both Tom and his parents to seek help from their priest or doctor, but again without success, although Tom was faithful to both Church and his catechism class. I found a gym suit for Tom, so he could attend Phys. Ed., which he began to do.

Toward the end of the school year, I talked to the parents about sending Tom to Junior Citizens' Camp, a camp operated for delinquent and predelinquent children near _____. They thought they couldn't afford it because of the sister's frequent trips to the hospital, but when I told them there was a scholarship available, they decided he should go. At first Tom was reluctant, but eventually really wanted to go. I felt it might be a step in "lifting his sights," and in giving him a purpose and some values. The camp is interdenominational and interracial. After camp he is to help his father in his work and possibly participate in swimming activities. He is a boy with good

We have already seen in Chapter 4 how the comparative marking system prevents optimum development in many children, especially those on either extreme of the range of ability. The developmental point of view prevalent throughout this volume clearly indicates the individual progress point of view for evaluation and the assigning of marks. In fact, the way in which children and teacher undertake learning under such a view is connected significantly to the way in which pupils are marked and to the way in which the development of the child is reported to parents. It is the considered judgment of the author that the dilemma stated in the paragraphs above is the result of compromise thinking on an educational question which does not lend itself to compromise. Compromise on this question, specifically, results in the adulteration of scientific principle.

It cannot be argued satisfactorily that a change in the system of evaluation awaits the effectiveness of a public relations campaign. The new system of evaluation and reporting to parents recommended by child development specialists possesses its own effective public relations media. A parent becomes oriented to the system by being involved in its process. If understanding is needed, it comes only through participation. Even if parents insist on being informed of where their children rank in a group of learners of the traditional school subjects, they will perceive ultimately the relative unimportance of such information when in the professional conference all of the important facts concerning the development of their children are presented. Again, there can be no compromise on the question of withholding information from parents. If the system of professional conferences is to succeed, no information can be withheld. The scores on standardized tests, for instance, should be communicated in terms of percentile ranks of national norms. This type of comparative data is helpful and important for the parents to know in making long range plans for the education of the child. This type of information should satisfy the parent's desire to know where his child falls in the range of ability. Yet, the main purpose of these measures will be utilized in a thorough diagnostic appraisal of the individual, and the focus of the report-

ing medium, the professional conference, will be upon how the school and the home can join to further the maximum development of the child in all areas of learning and growth. Again, the main assumption underlying this type of evaluative thinking will be how the individual child is achieving in terms of his estimated potential in the various areas of learning, rather than how his achievement compares with that of others in his group. Also, this type of thinking applied to the evaluation process will tend to eliminate the unfavorable effects of the comparative marking system on the learners at either extreme of the range of ability, namely, the slow learner and the gifted learner.

The foregoing, naturally, should not be interpreted to mean that precise data and symbols will be eliminated from the appraisal picture. Where precise measurement is possible, precise scores should be communicated. The conference method of reporting, just like the comprehensive methods of recording information for evaluation described in the previous section, places emphasis upon multiple indications of growth, upon the face-to-face verbal exchange of information (the pupil, teacher, and parent all receive and give information), and upon the planning which should always emerge from evaluation. Whereas, symbols can present only a partial and sometimes distorted picture of evaluation, the conference should present as total a picture as possible.

MARKING AS A SUBSIDIARY TECHNIQUE

An evaluation and reporting system in line with the present level of scientific knowledge in the teaching profession will relegate the assigning of marks to a subsidiary position. Marking is not the essence of what is to be reported to parents; what is to be communicated to parents is more comprehensive and may include a record of marks on various tests and work products. Marks conveyed on a stiff report card should become a thing of the past as well as the report cards themselves. The report card of the typical school is a barrier to effective communication between the school and the home. It tends to perpetuate precise marks as the sum and substance of what should be reported to parents. Instead,

marks should be interpreted in relation to the precise learning activities which give them meaning. General symbols, too—presumably the average of many lesser symbols—must be rejected as inadequate.

REPORTING PUPIL PROGRESS TO PARENTS

REPORTING PRACTICES RELATED TO CURRICULUM DESIGN

To make the democratic problem-solving curriculum successful, there should be, for reporting purposes, a teacher-pupil-parent conference, immediately followed by a more confidential teacher-parent conference upon each child.

A child needs encouragement from his teacher; conferences must be for encouragement and future planning, as well as for assessment of achievement and the solving of behavior problems. When the child can appreciate another's views, (*in this case, the teacher's*), although he may not agree, he is on the way to social and psychological maturity. And if the teacher does not always disagree with everything the pupil says, expression will be given to the weak points of his argument along with the strong points, thus helping the child evaluate himself and set up new goals of his own for improvement. His discussion during the conference will provide the teacher a better picture of what he is thinking and feeling while staying on friendly terms with the child. A teacher must be interested enough to listen to things pupils wish to relate during conferences. Many times the timing for conversation will depend upon the listener's mood. If either party is not in the mood for conversation, very little productive communication will follow.

The teacher's attitude will be a determining factor in his ability to hold conferences with pupils and parents. If a teacher's attitude is antagonistic, egotistical, overbearing, superior, or indifferent, he will find it difficult to give or receive much significant information.

THE TEACHER-PUPIL-PARENT CONFERENCE

Both teacher and parents are interested in the child; they have a common ground to start on. The secret of success in reporting

pupil progress lies in the teacher-pupil-parent conference. Here is an opportunity to clarify all misunderstandings and set goals which are common to all three. It is the chance to help the child not only become happier in school, but he can receive the aid and understanding of his parents in making overall progress. Together the three can better understand the child; his weaknesses and how to overcome them, his strengths and how to make better use of them.

The teacher should ask the pupil to bring his folder (described below) to the conference. The child will present evidence of his own progress, make plans co-operatively with the teacher and parents for the next learning period. The teacher-pupil-parent conference method enables them to evaluate conditions and, in turn, be stimulated to set new goals individually and collectively. This method provides for a maximum concern for meeting the individual's needs for it affects profoundly the whole curriculum of the child. It sets as its goal the individual's optimum development.

Records for the Conference: the Pupil and Teacher Folders

In order to better evaluate the progress of the pupil, and for the pupil to evaluate himself, the pupil's folder should consist of the following:

His current goals and plans ("What I am trying to do")

His spelling lists for the previous evaluation period

His arithmetic papers

His book reports

His drawings, maps, etc.

His poems and stories

His reports of field trips, projects, or films

His write-ups of science experiments

His progress estimate ("What I have done")

The teacher's evaluation-reaction

His goals for next period

The parents' evaluation or reaction

The teacher's folder is kept confidential except for the informa-

tion needed for direct remedial guidance of the children. It consists of the following:

- Intelligence profile
- Achievement battery profile
- Sociogram
- Accumulating case study or brief anecdotal record
- Citizenship check list
- Rating check list by other students on committee work after each unit culmination
- Record of daily achievement in basic skills and subjects

The child's folder will enable him to chart and follow his own progress and will encourage him to reach his individual and group goals. Stories and reports written by each child will reveal personality traits and attitudes which may serve as a point of departure in teacher guidance.

Progress in the social development of a child is indicated when he begins to show an awareness for the feelings of others in his group and tries by thought and action to understand the needs of every child in his class. Also, he shows progress when he restates and clarifies vague statements and stimulates other members to more successful effort in class activities by encouraging them with their work.

The teacher's folder is used primarily during the teacher-parent part of the conference after the child has been dismissed. The confidential information may be shared with the parent at this time. Further interpretation and planning will result from this phase of the conference and will lead to new or improved approaches for the teacher or parent to use in dealing with the child in his present stage of development.

Suggested Agenda for the Reporting Conference

There is no single magic way to conduct the teacher-pupil-parent conference. Experienced teachers will try a great variety of approaches and techniques. It may be helpful to the novice, however,

if a few suggestions are made concerning a tentative agenda which may guide the discussion.

1. Get warmly acquainted with all parties. Steer the discussion to points about the family so as to give the parents something about which they can talk with confidence. Find something favorable you can say about the parents or the child in the beginning.

2. Begin the reporting session by asking the child to tell about or show something he has done well during the previous evaluation period. Then ask the child to open his folder and read his goals and plans ("What I am trying to do") formulated at the last conference. Help him to specify his progress toward these goals as he turns through his spelling lists, arithmetic papers, book reports, etc.; when appropriate ask him to supplement his folder with scientific apparatus, maps, construction products, and the like.

3. When the child has presented a representative sample of his work during the reporting period and has in an informal way indicated his attention to the goals and plans formulated at the last conference and elaborated upon continuously during the period, ask the child to read his progress estimate ("What I have done"). This progress estimate of the pupil must be composed by himself without help (except in the primary grades). It should be a short summary rather than a lengthy report of all activities in which the child may have been engaged.

4. Hand the pupil your short written evaluation-reaction prepared previously after studying the pupil folder and referring to the teacher folder for pertinent information.

5. Encourage a discussion of the differences in the pupil's and the teacher's evaluations. Make any necessary corrections in either report and place both back in the pupil folder. Ask the parent to write an evaluation for the folder like that of the pupil and teacher when the parent returns home. Review quickly the evaluations that were written by all three parties at the last reporting period to note the progress made by the child and to note any change of opinion held previously by either party.

6. Lead a discussion on goals for the next period by first asking the pupil to read his prepared list. Encourage the parent to enter the discussion freely by asking such questions as: "Do you think he can do this much?" "Does he have enough time at home to do this?"

"Is there a place at home where he can lay this out?" Get tentative agreement by all on what the goals should be, subject to any changes indicated as the learning activities occur.

7. Dismiss the child from the conference. Have a plan for where he is to go and what he is to do during the time when the teacher and the parent have confidential discussion.

8. Review any points you or the parent may wish to discuss concerning the pupil's report.

9. Share information as needed from the teacher folder to account for any aspect of the pupil's progress or lack of it. Give the parent an indication of whether the child is working up to his capacity or potential. If not, try to account for the deficiency or ask the parent for any light he can throw on the problem.

10. Interpret standardized test scores either in percentile ranks or in grade equivalents. Avoid giving the IQ or mental age of the child but interpret his academic intelligence by referring to the profile and his percentile rank on the national norm. Avoid comparing the pupil with other pupils in his group.

11. Map plans to help the child with his problems or to facilitate his development in any way: physical, social, emotional, intellectual.

12. Express appreciation for the opportunity to visit with the parent and mention the probable time of the next conference.

PROMOTION POLICIES

THE DEVELOPMENTAL VIEW AND PROMOTION OR NONPROMOTION

From the developmental view of the child, promotion policies of the typical elementary school seem archaic and unnecessary. If this view were truly operative in America's elementary schools, the graded system would disappear. It is the graded system that gives rise to the need for promotion and nonpromotion. The developmental psychologist would rather see the child moving with his own peer group and at his individual rate without deprivation or coercion. Since his curriculum is unique, shared in only some respects with others, a longitudinal view of his progress through school appears far more significant than the level attained at any given time in the lock step graded system. Anyone who has had

even a remote acquaintance with schools in the recent past knows that the lock step system has been compromised since the admission to schools of all the children of all the people. The standards for each grade level have crumbled before the onslaught of those not academically oriented or naturally gifted. The nonsense of the "social promotion" had to be invented to account for the passing of many overage children who no longer could drop out of school because of compulsory attendance laws. The traditional system of graded levels, although propped up with various remedies during the past three decades, nevertheless is one of the school's vestigial remains of a by-gone day.

The research on promotion and nonpromotion tends to support the following conclusions:

1. Nonpromotion does not increase the homogeneity of grade groups.
2. Children who would ordinarily be retained and are promoted tend to learn more the next year than children of like ability who are not promoted.
3. Nonpromotion is a mental health hazard for the child.
4. Nonpromotion tends to promote discipline problems.
5. Nonpromoted children naturally tend to choose companions from grades higher than their own.
6. Variability among the traits of the individual are often so great, he fails in some respects and passes in others; most children are below grade in some characteristic.*

* William H. Coffield, "A Longitudinal Study of the Effects of Nonpromotion on Educational Achievement in the Elementary School," unpublished doctoral dissertation, State University Iowa, 1954; Grace Arthur, "A Study of the Achievement of Sixth Grade Repeaters as Compared with That of Non-repeaters of the Same Mental Age," *Journal of Experimental Education*, V (December, 1936), 203-205; Vivian Klene and Ernest P. Branson, "Trial Promotion versus Failure," *Educational Research Bulletin* VIII (January, 1929), 6-11; Hollis L. Caswell, *Nonpromotion in Elementary Schools*, Nashville, Tenn., Division of Surveys and Field Studies, George Peabody College for Teachers, 1933, pp. 44-46; Adolph A. Sandin, *Social and Emotional Adjustments of Regularly Promoted and Non-Promoted Pupils*, New York, Bureau of Publications, Teachers College, Columbia University, 1944, p. 125; Eugene S. Farley, "Regarding Repeaters: Sad Effect of Failure upon the Child," *Nation's Schools*, XVIII (October, 1936), 37-39; E. W. McElwee, "A Comparison of Personality Traits of 300 Accelerated, Normal, and Retarded Children," *Journal of Educational Research*, XXVI (September, 1932), 31-34.

PROMOTION POLICIES AND THE GRADED SYSTEM

So long as the elementary school is organized in terms of a lock step system, teachers and administrators will need to develop policies for promotion and nonpromotion. If a child is to be non-promoted, very serious care should be given to the reasons supporting the decision. Research cannot endorse nonpromotion in general. Surely, the reasons for nonpromotion of a child should be unusual and highly specific as well as multiple. To be below grade in some respects is normal and is characteristic of most children. To be generally immature in most characteristics is perhaps the only defensible reason for nonpromotion. Perhaps the most favorable time for retention of a child is in kindergarten or first grade if the reason is general immaturity; and of these, retention in kindergarten seems the more desirable practice. The ungraded primary unit represents a partial answer to the problem of immaturity and slow starters.

If children can be classified with their own natural group, i.e., organismic age⁵ group, no scientific basis exists for nonpromotion even in the typically graded school. Organismic age is a growth age, the average of several growth factors: carpal age, grip age, dental age, reading age, height age, mental age, and weight age. No one or two of these factors can adequately classify a child, only the total.

Children who are classified and grouped in school according to organismic or growth age will tend to have similar developmental tasks at a given time. Their interests, play habits, and needs will be as similar as grouping can make them. Under such circumstances, research indicates that the child will do his best if he remains with his group throughout the elementary school. Extreme variability in the ability range will be somewhat reduced by grouping on the basis of organismic age. Since grouping by mental age fails to produce homogeneity, even in intellectual activities, grouping by growth age will produce a more compatible social group, a

⁵ Willard C. Olson and Byron O. Hughes, "The Concept of Organismic Age," *Journal of Educational Research*, 36 (April, 1943), 525-527.

genuine peer group. Many teachers will welcome the reduced range of abilities in their class groups as well as the compatibility of group members in terms of social behavior.

In democratic, problem-solving curriculum design, there is no place for nonpromotion when children are classified into genuine peer groups. Each child moves at his own rate in academic activities within the larger society of the classroom in which he takes an important role. He has his own curriculum with its great variability in levels of achievement among the various curriculum areas like reading, spelling, arithmetic, or penmanship. He uses his learnings constantly to participate successfully in group undertakings. He is an individual, yet he is a group member. He is different, yet he is accepted and needed in group activity. He remains with his group.

SUMMARY

Evaluation, like learning experiences, should be geared to the unique individual. It is integral with learning activity and leads to improved responses in the quests of the learner. Evaluation, then, must be continuous with learning so far as the learner is concerned. Teachers also should engage in more continuous evaluation rather than relying solely upon periodic tests. Further, teachers should engage in evaluation primarily for diagnostic rather than judicial purposes. They should base their evaluations upon many sources of evidence rather than a few. Teachers should make full use of the instruments and records which are the tools of the profession. These include: (1) readiness and diagnostic tests, (2) intelligence or general scholastic aptitude tests, (3) the sociogram, (4) anecdotal and behavior records and (5) the case study. These instruments and records point up the diagnostic role of evaluation. Marking is seen as a subsidiary technique in this context.

Reporting to parents should be related to the kind of curriculum design which motivates the school program. If pupils are evaluated mainly in the progress they are making based on their potentialities, the main burden of reporting will be to indicate the gap or relationship between what the pupil *does* and what he *can do* rather than to indicate his comparative standing in his class.

The individual progress plan for evaluation and reporting is served best by the teacher-pupil-parent conference. In such a conference, the focus is upon pupil self-direction and self-evaluation under the guidance of teacher and parents.

Promotion policies should be interpreted in terms of the design for learning and evaluating. Promotion and nonpromotion can become useless terms in a school where pupils live and learn at their own best rate and quality.

Selected Readings

Goodlad, John L., "Research and Theory Regarding Promotion and Nonpromotion," *The Elementary School Journal*, LIII (November, 1952), 150-155.

Langdon, Grace, and Stout, Irving W., *Teacher-Parent Interviews*, New York, Prentice-Hall, Inc., 1954. An entire volume of constructive information and advice on the subject.

Department of Elementary School Principals, NEA, *Parent and the School*, Thirty-sixth Yearbook, Washington, D.C., 1957. Chaps. 10-13.

Stendler, Celia Burns, "Building Secure Children In Our Schools," *Childhood Education*, XXV (January, 1949), 216-220.

PART II

**THE ELEMENTARY SCHOOL
CURRICULUM IN ACTION**

INTRODUCTION

The chapters in Part II are directed primarily to the prospective teacher although it is expected that the experienced teacher will find some helpful ideas and practices among those presented. The student who is preparing to teach should find in the chapters of Part II some clues to (1) present practices in good elementary schools, (2) the continuity of the elementary school curriculum from kindergarten through Grade 8, (3) ways in which subject matter and basic skills are woven into the educative process, (4) ways in which teaching is geared to the needs of the individual child, and (5) characteristics of children at the various stages of human development.

Seldom has it been possible for the prospective teacher to witness all of these curriculum factors in their functional setting prior to his experience with student teaching. The plan of Part II is to give to the student the best possible vicarious experience with the modern elementary curriculum as a functioning whole.

The curriculum areas, child development data, and principles of learning are spotlighted from time to time in the on-going process, not wrenched out of context for a separate and theoretical presentation. The curriculum is viewed as a whole, then, and not lost in the usual welter of subject matters and methodologies.

The prospective teacher may find that his reading of Part II will aid him in choosing the level or levels at which he may subsequently request an assignment for student teaching. Student teachers were active participants in some of the situations described and made important contributions to the quality of experiences which the children enjoyed.

CHAPTER 7

Learning Experiences of 5-Year-Olds

Typical daily events in a kindergarten are described in the first section of this chapter. These glimpses into kindergarten days include: teacher planning, some events of the first day of school, an account of the first group project, and the physical setting of the classroom.¹ The summary of the activities for 5-year-olds is presented and analyzed in the second section. The third section of the chapter deals briefly with purposes and concerns of kindergarten education today.

EXPERIENCES WITH A SUGAR PLUM TREE

FIRST DAY OF SCHOOL IN THE KINDERGARTEN

The children began arriving at Mrs. Nelson's classroom door at about 8:30 A.M. having first visited the doctor's office to receive a slip indicating that they had been checked by the school nurse. It is part of the school policy to give every child an examination each day and to keep the parents informed constantly about the health of the child.

Mrs. Nelson and her student teachers had carefully constructed the first day's program as to the need for: setting a friendly, informal exploratory day, watching and listening to the children as

¹ The experiences described and analyzed in this chapter occurred in a kindergarten classroom in the Children's School, National College of Education, Evanston, Ill., 1958.

they played in order to pick up interest cues for further planning, and explaining to the children about the kindergarten day.

Mrs. Nelson invited each child to explore the room. A large name tag, printed on material, was pinned on him for quick and easy identification. Everything was in readiness. The two student teachers assumed strategical positions related to materials and facilities. For instance, Mrs. Malone sat casually at a table invitingly prepared for experimenting with clay. Near by were the paint tables placed at an angle (in preference to the use of easels in order to provide a more satisfying, nondrip painting surface). Paint was mixed and ready this first day, but later often left for the children, with teacher's aid, to mix. Other tables were provided with scissors, paper, paste, and crayons.

The other student teacher, Miss Korsen, waited close to the science table to observe and listen to the children as they experimented with the magnifying glass. She was to look for cues to promote further learnings. Arranged on the table were various objects for viewing and exploring: an ant colony, twigs, stones, metallic ores, crystals, and a variety of objects in a basket. From this spot she could also observe and, if necessary, guide the children who wanted to play with the floor blocks or who might be interested in the sand box.

As the children explored the room, they discovered an inviting housekeeping corner. Here they could play house, cook meals, wash dishes, tend baby, arrange furniture, or clean house. A costume box contained skirts, hats, gloves, vests, ties, billfolds, and other items to help one quickly transform from a child to an adult. The work bench alcove is closed off at the beginning of each term and is not used by the children until they are physically and socially capable of assuming responsibility for equipment and its safe use. The teacher and student teachers help the children learn how to use the equipment safely by careful orientation and guidance as it is being used. As the year progresses, saws, hammers, nails, screw drivers, brace and bit are given to children along with adequate soft pieces of wood for easy construction of articles they desire to make.

At the far north end of the room where there is ample floor space and out of the way of the general traffic are large interlocking building blocks, which the children can manipulate on the floor, *making such things as houses, stores, trains, or boats.* The accessory toys to be used on the floor or in conjunction with the large building blocks are arranged neatly on open shelves near by to encourage the interest and imagination of the young builders.

A large tack board on the north wall of the classroom, usually decorated with the creative products of the children, now is artfully arranged with finger paintings done by kindergarteners during the previous school year. Often, as the year progresses, the children become interested in creating a mural centered around their current interest. During the previous term the children had built a lake cruiser out of the interlocking blocks and used the tack board as a background to show Wilmette Harbor with other kinds of boats, lighthouses, and buoys. The closeness of the lake and Wilmette Harbor to this school brings a sustaining interest in boats. Interests such as this are used to develop desire on the part of children to explore, experiment, and create through the media of: the Children's School library; building and dramatizing the activity; the many arts and crafts materials always accessible, and the rhythmic movement of dance and rhythms.

The piano is close to the art center and has a large rug immediately in front of it. This is a favorite spot for group planning, discussion, singing, and rhythm activities. There is a large kettledrum on a standard next to the piano and near by on a table a few instruments (clapper, bell, and tom-tom) ready for the children to explore sound and rhythm. Also close to the piano is an attractive library corner. Here is a carefully selected variety of books—story, poetry, song, and informational—placed on low shelves to promote independence of selection. Frequently, individuals or small groups will be found looking at them and at times conversing about the contents to one another. The books are often changed by the teachers as new interests of the children are discovered.

Thirty-five minutes of activities based on exploring and experi-

menting with various materials and equipment, on this first day, passed quickly. Chuckie, Scott, and Jimmy worked with wet clay for a few minutes, then joined the block-building group. Wendy experimented with scissors and crayons. Blossom and Joan tried their hands at painting. Clay and several others built roads out of blocks for cars and trucks, while Ellen and Andrea set up house-keeping and sent David "off to work right after his breakfast." Josh, David, and Sara became interested in the material on the science table and for many minutes explored and experimented with the magnifying glass. At about 9:40 A.M. Mrs. Nelson blew a sweet, musical note. The children turned to her to see what had made the enchanting sound. She asked them to join her on the large rug near the piano in order to show them what had made the pretty noise. She sat in a low chair with the children grouped informally about her and raised to her lips a tiny charm-like whistle. Again came the entrancing sound and this time the children saw the whistle. She passed it around to let the children see and feel it. She explained to them that she would always blow the whistle when she wanted their attention. They could save much time by stopping what they were doing and "closing their voices" until she had explained what the group was to do next. From now on when they heard the whistle they would know there was something to talk about.

The advantage of a whistle (never with a shrill tone) for a teacher is that it is always with her indoors and outdoors and she can use it in any part of the room or playground. When it is explained to the children and used by the teacher with care it is most effective and likewise, when misused, can be very ineffective.

The following recorded anecdote will illustrate one of its uses:

One day, later in the term, several children tipped over a chest of drawers in the housekeeping corner for the third time and at the same time broke the door of the refrigerator. Mrs. Nelson blew her whistle and asked all of the children to come to the rug.

Mrs. NELSON: We think it is time to talk about things that have been knocked over. When this happens something usually breaks.

What can we do about it?

BLOSSOM: Don't let anybody come to the housekeeping corner.
Lock the doors.

MRS. NELSON: I don't like to lock my doors because the people
who come to my house don't knock things over.

MRS. NELSON: Do you like to play in the doll house?

JILL: Yes.

MRS. NELSON: What caused the chest to fall over?

ANDREA: The drawers fell out.

JILL: The boys ran into the house and the girls started to run, too.
We jumped.

CHUCK: When can we play with the hammer?

MRS. NELSON: When you want to go into a person's house, what
do you do?

JILL: Knock.

SCOTT: Walk in. You can't knock, there isn't any door on that
house.

MRS. NELSON: When you don't have real things to play with, what
can you do?

SCOTT: Buy 'em.

MRS. NELSON: Can you pretend?

TINA: I know—ring the bell.

MRS. NELSON: Is this a real house? No. How do we know that this
is not a real house? It has no walls. Scott and Chuck, the next time
you want to play in the doll house, what are you going to do?

ALL: Ring the bell.

Knock on the door.

May I come in?

Then they went into conversation about how to mend broken toys.

CHILDREN: Nail it.

Glue it.

Tape it.

SCOTT: It wouldn't do any good to tape it, because the tape would
come right off. Chuck and I will mend it.

Mrs. Nelson thanked the children for their help, and said, "If any-
thing more happens we shall have to talk about it again." Scott and
Chuckie, at Scott's suggestion, did glue the broken piece, with super-
vision, and it turned out to be an excellent mending job.

Rickie now became enthralled with Mrs. Nelson's charm bracelet which dangled, among other things, an airplane. She took off the bracelet and passed it around for everyone to see. There were several comments about airplanes from the children. These led to further sharing of objects and experiences in the group. Thus Mrs. Nelson launched their first discussion. She learned much about the children from this initial face-to-face activity and plans for helping them were taking shape.

While the children were still on the rug Mrs. Nelson told them about the mid-morning snack and of the need to clean up the playroom and to wash their hands before having fruit juice. All the teachers helped extensively with cleanup during the first weeks of school as the children needed much assistance and guidance. Independence and ability to complete a cleanup task is developed very gradually and is never accomplished in the first year at school.

When the children were ready for their snack (some looked at books while waiting for others to complete washing their hands) they went to the tables and drank fruit juice and ate a plain cookie. This is an excellent time for group conversation. Mrs. Nelson and the student teachers attempted to guide the children into a different seating arrangement each day so that the conversation group could change. However, there was no fast rule to keep friends apart if they sought one another out. After the snack period of approximately fifteen minutes came the rest period. Each child had his own rug brought from home which he placed on the floor in a spot of his own choosing. It is a quiet time for both children and teachers, with no talking or moving about.

At about 10:15 A.M. Mrs. Nelson asked the children to fold their rugs and put them in their cubby holes and come to the big rug for a story and some singing games before going outdoors to play. When the group was ready for organized activities, this half-hour interval was planned for a variety of experiences such as: going to the gym for rhythmical activities; to the library for a browsing adventure and to select books for their own library corner; singing songs or playing games in the classroom; hearing the teacher read and tell stories or reading poems, with an oppor-

tunity to dramatize them; going on a field trip or a walk around the grounds to search for butterflies, pebbles, nests, and a host of other activities in which the group would develop interests. This first day Mrs. Nelson read a story about Peter's Adventure in school and then they sang several familiar songs.

The playground was in readiness for them when they arrived outdoors at about 10:35 A.M. Bicycles, wagons, and trucks were ready on the sidewalks for immediate occupancy. The milk wagon stood idle waiting for a group to develop some form of dramatic play. Today it was a school bus. The sand box with its many play-things was always an active spot and soon several tunnels were in progress. The jungle gym as usual had the greatest fascination—six of the children started to climb and swing on it immediately. At about 11:20 A.M., brothers, sisters, mothers, or school bus drivers arrived at the designated spot on the playground and children were soon homeward bound, Mrs. Nelson bidding them each good-by and mentioning tomorrow's fun.

THE FIRST GROUP PROJECT

Mrs. Nelson decided to initiate the first group project through the medium of children's literature, and specifically by reading to the children Eugene Field's poem, "The Sugar Plum Tree." By selecting a literary basis for planned group experiences such as the one described here, she felt there would be many common points of interest for the children and, yet, there would be many leads to individual endeavors springing from individual interests and abilities. In fact, the poem seemed to her to furnish leads to all of the areas of the kindergarten curriculum which could be introduced at this time. It would be particularly helpful as a context for the development among the children of new concepts. Knowing that children of this age have dreams and often fears connected with them, she planned to introduce discussion about dreams in order to extend better understandings of them. To make the tree itself would provide excellent opportunities for the children to experience the various art media. The fascination that new words, sounds,

and meanings have for children also would be capitalized upon, as would their interest in dramatization and poetic expression.

One day during the first week of school, after the morning play activities and snack, she asked the children to gather on the rug and with characteristic enthusiasm and excellent interpretation, stemming no doubt from her own personal appreciation of the poem, she read part of the poem to the children.

After reading part of the poem, Mrs. Nelson engaged the children in discussion.

MRS. NELSON: What kind of a cat was in the poem?

DEBBIE: Chocolate cat.

MRS. NELSON: What was under the tree?

SCOTT: Arf, Arf.

OTHERS: The gingerbread dog.

MRS. NELSON: Shut your eyes and think about the tree. What else do you see besides the chocolate cat and the gingerbread dog?

CHUCKIE: I see plums.

MRS. NELSON: What color were they?

CHUCKIE: Red and round.

SARA: Mine were red, too.

JIMMIE: Mine were yellow.

JOSH: I saw red lollipops.

Mrs. Nelson then suggested that it might be fun to draw or make things which belong on a sugar plum tree. This led to creative art activities for the remainder of the morning until it was time to go outside and play. Most of the children entered in to this activity but a few returned to other interest centers about the room.

On the next day, after snack and rest time, Mrs. Nelson read the entire poem to the children. The discussion of the poem turned to much talk about dreams. Several children were anxious to tell about their bad dreams, using the term "nightmare" frequently. Chuckie startled everyone by saying, "I even have daydreams." When asked what he meant, he said, "I always see my mother in my daydreams." The teacher gradually turned the discussion to the possibility of having good dreams, such as the one in the poem.

They thought it might be fun to try to see a sugar plum tree in their dreams that night.

The next day, Mrs. Nelson asked the children if they would like to make a sugar plum tree in the classroom. She had prepared the trunk of the tree out of white paper prior to the beginning of the school day and now tacked it up on the folding door in the center of the classroom. She had made branches out of tag board and left them lying at the foot of the tree suggesting that they needed to be painted. To the teacher's surprise, the children seemed to lack interest in pursuing the project. She dropped the matter for that day and tried to determine why the children had failed to respond. She decided after some thought that she had moved too quickly, that the materials probably were not suggestive enough, and that the children probably lacked sufficient understanding of the content of the poem. She decided to pick up the sugar plum tree theme at the beginning of the next school day, revising her strategy and materials a bit.

As the children came in the following morning, she began to rustle some bright crepe paper.

MRS. NELSON: I am going to make a Sugar Plum Tree. Would anyone like to help me?

BLOSSOM AND JILL: I will, I will.

MRS. NELSON (fingering the bright red paper): What could we make of this?

BLOSSOM: Sugar plums are red. I will make some with this paper.

MRS. NELSON (picking up some bright orange paper): What would be this color?

JILL: I like orange lollipops. May I make a lollipop with this paper?

Scott came up to the group with some interest. He had had a negative attitude toward adults during his first few days in kindergarten. He was beginning to mellow. He asked, "What are you going to make out of this?"

Mrs. Nelson ventured, "What on a tree is brown?" "Bark," he responded. Mrs. Nelson mused, "I wonder how we could make bark out of this paper." A discussion then ensued with Scott mak-

ing most of the suggestions. Mrs. Nelson helped carry them out as he and Josh started making pieces of bark. Scott thought that some black pieces of bark would do nicely among the brown. The bark was then tacked to the trunk which the teacher had put up on the door on the previous day. The trunk was never completely covered with bark but the children seemed to get the point and filled in the rest with their imaginations.

Other children came to see what was going on and asked what they could do. Mrs. Nelson offered, "Well, the branches will have to be painted, don't you think?" The children agreed. Turning to Clay, she asked, "What color do you want?" Clay selected blue and took a tag board branch. Mrs. Malone was ready to help him mix paint and off they went to the paint pots.

Rickie ventured forth and asked if he could paint one, which suited Mrs. Nelson. Rickie's choice was purple. Tina wanted to paint a branch red; in fact, she painted two branches red. Presently the painting facilities were overtaxed and the teacher encouraged some of the children remaining to make sugar plums and lollipops. The time passed quickly and soon it was time for the mid-morning snack.

When the children came in the next morning, Mrs. Nelson informed them that the paint on their tree branches was dry—they were ready to be hung in place. She asked Blossom where the branches should be placed. At first the child placed a branch at the foot of the tree. Mrs. Nelson then asked the group where the sugar plums were described in the poem. "Very high up in the tree," they replied. "What do the plums hang on?" she asked as she continued to build the concept. "Branches," some responded. "Then, where do the branches go?" Mrs. Nelson asked. Blossom and the others reasoned that the branches should be high in the tree. Now each child who had painted a branch stood on a chair and held his branch in place while Miss Karsen tacked it securely to the tree trunk. Then Wendy was insistent that the sugar plums they had made go up on the tips of the highest branches, and so the tree began to take definite shape, and as it did the children's concept began to mature.

Wendy now insisted that they needed a black cat in the tree. Mrs. Nelson asked why. Wendy explained quickly, "Because he is chocolate!" All the other children seemed to agree. The cat must be black. There was no time left that day to make the cat and Mrs. Nelson assumed that it would be forgotten until she reminded them again on the following day. But Wendy had finger painting materials at home and she came in the next morning with the cat already made—and it was very black. Enthusiasm was high for placing it immediately in the tree. Lost, now, was the opportunity to teach the color of chocolate! No sooner was the black cat securely fastened high up in the tree when Clay crawled under the tree and began to bark, followed by several other boys. The girls immediately assumed the role of the cat and began to mew. Soon they were all "cavorting around," as described in the poem. Mrs. Nelson sensed that the children would enjoy acting out the entire poem and used this theme on the following day to plan with the children a program which they could put on for the beginning kindergarten or Grade 1. The children responded with enthusiasm and enjoyed rehearsing the play with David as narrator. He remembered every detail of the poem and told the story in his own words. As he told it the other children acted it out.

As the days passed the children improved the sugar plum tree, hanging new sugar plums or lollipops, but never the gingerbread dog of the poem. There seemed to be an unspoken agreement that he was not needed—his part could be taken by Clay or Scott on a moment's notice! When the day came for the play, Clay had made a paper mask of a dog's face for himself and Blossom the mask of a cat. At the appropriate time Clay barked, Blossom mewed and cavorted around, the rest made a scramble for the plums, the girls filling their skirts while the boys stuffed their pockets, while many "yum-yums" and cries of delight were heard. They enjoyed their experiences with the sugar plum tree.

THE KINDERGARTEN YEAR

The author asked Mrs. Nelson to record the experiences her children had had during the previous year so that the prospective

teacher could get an overall view of the kindergarten year. She and her student teachers had kept excellent records month by month and thus she was able to present a rather complete view of the group experiences of the entire year. The important fact emphasized by Mrs. Nelson in planning a kindergarten curriculum is the need for teachers to recognize differences in groups and to realize one program will never hold for a second group. If a teacher is sensitive to individual and group needs, she is constantly on the alert for children's exploratory activities and comments; from these interests she plans ways to extend their knowledge and to help them gain the concepts they are seeking. She continually records the children's interests plus the methods, materials, and ideas she presents to further their learnings, to deepen their present understandings, and to correct misconceptions (Jack Frost, dreams, etc.). Through this record she can see if the kindergarten curriculum is balanced and meeting the children's needs. Mrs. Nelson knows the importance of these early years in helping to develop readiness for future academic accomplishments. She recognizes that success in the years following is heavily dependent upon the child's capacity to understand his immediate environment, his ability to clearly express himself verbally and pictorially, and to control his body movements. Within the kindergarten year it is Mrs. Nelson's feeling that children should become quite aware of people, animals, plants, earth, sky, and materials. The child at this age needs to learn about the world he lives in through the development of his five senses. Every plan for extending experiences to gain insight and knowledge about an interest is done through developing one or more of the five senses. She double-checks her program to be sure as the year continues.

SEPTEMBER AND OCTOBER ACTIVITIES

Mrs. Nelson led the children to observe changes in nature at this time of year, as they brought in fallen leaves. They observed them, their changes in color, the various sizes and shapes, the vein structure, and other characteristics, including their falling from the trees as winter approached. The activities included collecting

leaves, pressing them for a leaf book, and identifying them. By the end of the fall the majority of children easily recognized the trees prevalent in the school grounds, i.e., maple, oak, elm, and silver poplar. Much interest was also shown in helping the custodian rake and burn leaves. This afforded an excellent opportunity to discuss safety rules with the group.

One of the children brought in some seed pods and the group learned how they traveled. Seed books were made for the science table to accompany their leaf book. Hibernation was discussed when the turtle in the class terrarium burrowed under the soft peat moss in which the plants grew.

During the Halloween season they carved pumpkins, washed and dried seeds, some for the art collage box, and others they planted in pots. The seeds of the pumpkin were contrasted with those in some of the seed pods they had collected previously and now had on display. The group planned a Halloween party, made paper costumes out of dry-cleaning bags, made paper masks, and paraded through halls and other classrooms. Their refreshments were apple juice and cookies.

NOVEMBER ACTIVITIES

In November the children learned how people, animals, and birds prepare for winter. Through further observation of plants they noticed how several types of non-seed-bearing plants changed to survive the winter. They observed birds' migration and noted that some remained and would need food. Some of the group noticed that many of the animals grow heavier coats of fur or hair as winter approached and discussed this with the teacher. They studied how people and animals get their homes ready for colder weather and how some animals take advantage of protective coloration in the snow.

Throughout this month they were interested in the harvest and the farm, so a farm home and barn were built out of the large interlocking building blocks. The discovery that city and farm homes have many likenesses and few differences was helpful in developing an understanding of people and their needs. Products

of the harvest (pumpkins, squash, gourds, corn) were added to their science table, already laden with seed pods, leaves, and other manifestations of fall. The first snowstorm took them outside to see how the seeds were lying dormant under the snow and leaves which furnished protection and cover. A visit to the furnace room of the building brought about an interview with Kenneth, the engineer, to learn how he prepared the building for winter. Discussions and dramatizations about the ways in which animals, trees, birds, plants, and people prepare for winter were frequent. Counting of nuts, squash, grains of corn, was of great interest throughout the season.

The first Thanksgiving was studied as they learned to sing a Thanksgiving song and made simple Pilgrim costumes to wear at the Thanksgiving festival. Notes were written to parents to ask them to send canned food to school for needy families in Chicago. Awareness of and sympathy for other people's misfortunes was now being developed.

DECEMBER ACTIVITIES

Much of the December activity led into the celebration of Christmas and Hanukkah. The making and giving of gifts was discussed. Each child chose the gift or gifts he wanted to make and received the guidance needed to complete his selection. The gifts were wrapped with paper they decorated and tagged with original tags. Ornaments were made and hung on the Christmas Tree. Since, some of the children in the class were Jewish, the group learned about Hanukkah, the Menorah and Dreidel Top (a Jewish student teacher and a mother helped with this celebration). The first Christmas was discussed and a stable scene constructed out of blocks and the story reenacted many times by the group. A party was planned for their parents. The invitations were written by the teachers and decorated by the children. Cookies were baked and served to the parents along with fruit juice. At the party, two days before vacation, games and songs were sung and played by both parents and children, and then the group acted out the Manger

Scene and gave their wrapped gifts to their parents. The last day of school, the tree was taken down and the children took the ornaments for home decorations.

JANUARY ACTIVITIES

In January the children made stick puppets and paper bag puppets after using some commercial ones supplied by the children in the class who had received them as Christmas gifts. They built a puppet theater out of blocks, and dramatized many of their familiar stories and poems as well as creating some original ones. Tickets for their puppet shows were made and sold to other classes.

Besides having fun in the snow with sleds, snowmen, and shovels, the group studied snow from a scientific point of view. Experiments were made inside the building and out by observing the flakes under the magnifying glass and letting them melt and re-freeze. A discussion about birds brought out how snow helps and hinders people and birds and so they planned to help feed the birds at the school's bird feeding station. Each day food was taken out to the feeding station and the children observed the kinds of birds that remained in the north all winter. Bird tracks in the snow sent them to the library again to find out about animal foot tracks. Comparison of human tracks to bird and dog tracks helped to form a clearer conception of the world they live in.

When a child brought in a magnet, a study of magnetism developed out of the intense interest of the children. Different sized magnets were used in their various experiments of what a magnet would attract.

FEBRUARY ACTIVITIES

February activities centered around the special days of the month, the birthdays of Washington and Lincoln and Valentine's Day. The teacher led a discussion about the two famous presidents after which she read stories and poems about the two men. Art activities stemmed from these discussions, including the making of flags with scissors, paper, and crayons. The Valentine season stimulated an interest in mail. They built their own post office out of

large building blocks and played post office. They visited with the mailman when he brought the mail to school. They visited the post office, the better to know how to operate their own. After this field trip they decided that each child needed an individual mail box in the classroom. This activity afforded another opportunity for name recognition and by now all the children recognized their own names and were beginning to recognize others. The Valentine party was planned by the group and included the making of jello and heart-shaped cookies sprinkled with red candies.

MARCH ACTIVITIES

Several children temporarily withdrew from school in February and March to accompany their families on trips south. The discussions which these departures stimulated gave rise to a study of transportation. The advantages and disadvantages of each mode of transportation became of interest to the group. Boats apparently were preferred. Since the children lived near Lake Michigan, they had had some first-hand experiences with lake cruisers. This proves a sustained interest. Pictures, stories, or poems about boats were brought from home. They painted pictures of them, dramatized stories about them, built a lake steamer out of blocks and other accessory material. Library research was required to learn about the differences between a sail boat, row boat, barge, and steamer. Opportunity to measure correct lengths of paper in order to make waves introduced the yardstick, and another experience in spatial relationship was thus promoted. The tack board at the back of the room soon became Wilmette Harbor and many interesting nautical signs appeared, such as: lighthouse, buoys, sail and motor boats.

The study of the weather again took the spotlight as the extremes of March weather stimulated interest. Mrs. Nelson helped the children to construct a weather calendar and then helped them mark each day of the month according to the type of weather prevailing. She helped them to read the thermometer by watching the rise and fall of the mercury. A thermometer made out of tag board and with an adjustable red ribbon representing the mercury helped the children to understand the thermometer readings. Experiments

with hot and cold cloths on a large thermometer and contrasting inside and outside readings furthered their understandings of climate. They visited the college science laboratory to see a demonstration with mercury and air pressure. They learned about specific types of weather: frost, rain, snow, wind, clouds, and how to dress for each.

APRIL ACTIVITIES

During April the children were still preoccupied with weather and its changes. Now there was an awareness of spring. The children observed that some of the birds were returning from the South, and watched a robin build a nest. During the Easter season an awareness of animal babies and young plants was increased. The teacher helped them experiment with bean sprouts to show their need of water, soil, sunlight, and air for growth. Baby chickens were kept in the classroom for a week, and some of the group built a pen for them out of the turkey cage used a previous year, supplemented with large floor blocks. Renewed interest developed in the farm through the animals. This time they discussed the use of the silo and how to make butter. Butter was churned by the children and eaten on crackers at the mid-morning snack. Vegetable and flower seeds were planted in flats, to watch them grow, and later transplanted to the yard. One child brought his pet hamster to school and the children had a new opportunity to observe the habits of an animal. They compared the diet of the chicks and the hamster and had a discussion of the various foods that young animals of all kinds eat. They discussed rabbits and Easter eggs and dyed some of the latter for their Easter egg hunt. Mrs. Nelson helped the children count the eggs and again they derived some preliminary number concepts from these experiences.

MAY ACTIVITIES

In May the children transferred the seedling plants from the flats to individual pots and watched them quicken in their growth. When the plants were strong and hearty, the children took them home for transplanting into their gardens. Thus the teachers

helped children to understand the need for perpetual care of plants if they are to survive. They celebrated May Day by discussing its American meaning and by picking flowers in a nearby field for May baskets which they had made from milk cartons. They placed the May baskets on several classroom doors in the building. Now there was an avid interest in Grade 1, and the teacher managed an invitation to visit the first grade classroom. During their visit, the first graders told them the likenesses and differences between Grade 1 and kindergarten. Grade 1 seemed so grown up to the little visitors, they were ready to get on with it. Their thoughts turned to the fall season when they would enter "real school." They planted aster seeds in the school yard which they hoped would result in flowers for the fall to pick as first graders. The care of plants during the summer was discussed with the custodian and he readily agreed to care for them while the children were gone for summer vacation.

As Mother's Day approached, they discussed its meaning, made gifts for mother, wrapped them, enclosing cards of their own drawing. Their final project for the year consisted of preparing the room for summer school. They washed all of the doll clothes, washed the dishes, cleaned the cupboards, boxes and individual cubbies. They dusted the window ledges, book shelves, and toy shelves. They repaired several broken toys and placed all of them neatly in their proper places. On their last day of school they sang and played their favorite songs and games, heard their favorite stories and poems read. The group recalled the good times they had had in kindergarten together and many of the things they had learned to do, besides talking about how they had grown during the year and about the wonderful future in Grade 1.

PURPOSES AND CONCERNs OF KINDERGARTEN

THE KINDERGARTEN AS EDUCATIONAL EXPERIENCE

Kindergarten is more than a prelude to school; it *is* school. Its program is an integral part of the total curriculum of the modern

elementary school.² Kindergarten is more than a play center, although play is an important part of its curriculum. It is more than a place where children can learn to get along together although this is a very important readiness factor for formal schooling. The modern kindergarten has an opportunity to introduce significant learnings in a wide range of curriculum areas at a time when the child is nearer the most formative years. Thus, the kindergarten should not be classified as preschool but as an integral part of the school itself.

THE KINDERGARTEN SETTING

The kindergarten setting is different from that of the home. The kindergarten teacher aims to create a well-ordered classroom where the children will discover many purposeful activities which give individuals and groups opportunities for experimenting, exploring and creating. The physical setting, *indoors and out*, is of vital importance as the teacher recognizes that play materials and equipment are the kindergarten child's tools for learning. As Ethel Macintyre says:

Educationally, the kindergarten is quite unlike the home. No family has twenty-five 5-year-olds living together under one roof. No household, within itself, can provide the kind of social, adaptation the kindergarten gives to children of many families. The large space needed for a wide variety of activities—the copious amount of equipment, facilities and supplies—the temporary but very special developmental characteristics of the kindergartner—make home-style architectural specification unrealistic, impractical, and in many ways undesirable.

.....

Many effective kindergartens resemble movie lots. In providing opportunity for numerous types of constructive experience, the teacher, whenever possible, creates an appropriate environment. Devices such as special furniture, screens, flats and even costumes, are put to good

² Fred P. Barnes, ed., *School Begins with Kindergarten*, State of Illinois, Illinois Curriculum Program, Bulletin No. C-1, pp. 1-4.

use. Educationally, even the walls of the classroom are vertical teaching aids.

Within reason, therefore, the kindergarten should be constructed as a "stage" providing opportunity for a wide variety of "scenes" and situations which are a meaningful part of the 5-year-olds' school living.

It is a waste of the taxpayers' money to build more than a minimum of chalkboard space into the modern kindergarten. Of much greater value are areas on which the children can display their work, or on which task-supporting materials can be placed, such as tack, cork and peg boards. Large window areas, particularly those with glass extending to the floor, tend to reduce the utilization of the room as a stage.

Thus the kindergarten has its own unique setting and facilities. It has requirements unlike those of the home but not unlike those of a modern primary classroom, in that 25 to 30 children should be the extent of the enrollment, and the floor space be 40 square feet per child. Running water, toilet and coat room facilities are needed in each room with ample storage space for supplies and good wall board space for displaying children's work. Open shelves are required for books, toys, art supplies and blocks as material should be accessible to the children if independence is to be developed. Children of this age should spend a share of each kindergarten day outside, therefore the playground too, must be well planned and equipped. Sharing facilities with primary groups can be successful if teachers plan together not only outdoor schedules but equipment, its placement and the general rules of safety to be learned and followed by all children. These and other concerns confront school officials as they plan the setting for kindergarten education.³

CLOSE HOME-SCHOOL COÖPERATION

Although coöperation between the home and the school is essential at all levels of education, close coöperation is particularly desirable with young children. Expectancies differing from the kindergarten reality can often confuse the child, blocking his progress. To know the child and his home background and setting, and

³ Ethel Macintyre, "A Kindergarten Expert Speaks Up for Better Design," *School Planning*, August-September, 1957, pp. 3-5.

particularly the emotional climate enveloping the child, presents one of the chief problems of the kindergarten teacher. The unending task of studying the child and his home relationships in order to facilitate his development at school often is an unrecognized and thankless routine of the well-trained and professionally oriented kindergarten teacher.

SUBJECT MATTER AND THE MATURITY OF THE CHILD

There is a wide range of differences in ability and maturity among 5-year-olds which make a uniform curriculum unwise and futile. Within the broad range of group experiences, provision must be made for individual progress. Kindergarten must never be an experience of forcing or of deprivation. Children should be allowed to explore the phenomenal and conceptual world as their maturity, interest, and ability permit. The foundations for subject matter are provided in kindergarten through functional and instrumental experiences of the type fostered by Mrs. Nelson throughout her kindergarten year. An important concern at this level of the educational enterprise is to place children in situations rich in substances with which to think, reason, and create through exploration and experimentation. A review of Mrs. Nelson's curriculum will indicate the rich environment provided her pupils for the development of both mental powers and personality.

SUMMARY

An important concern of the kindergarten is to furnish a sympathetic and an emotionally secure transition from the intimacy of family life to the more objective and hazardous life of the world outside the home. Although many children have informal contacts with the world and with peers before the age of four or five, these contacts are hardly ever sufficient to challenge to the full the maturing ability of the child to profit from the process of socialization. Most children need guided social experiences from the age of three. If the child must wait until he is six before receiving opportunities for systematic experiences he loses opportunities for contact with both his social and his physical world. These lost years

are among the best for the development in the child of desirable social and psychological behaviors and attitudes. Perhaps there is no more critical time than this span of three years for development of the foundations of social intelligence in the individual.

Kindergarten teachers know the value of success experiences for the child. Contrary to a popular misconception, children build strength to meet the problems of life through a series of feelings of success and not through feelings of failure. Kindergarten is a place where the child experiences exciting contacts with people and with phenomena without the pressures of a typical Grade 1. The cultural expectation is that a child must learn to read in Grade 1 even though many children are too immature to succeed. This is a dangerous and unnecessary expectation, creating failure hazards for many children. Such an experience with Grade 1 can be especially disintegrating when the child has not had a year or two of successes in kindergartens.

Since play activities are so characteristic of early childhood education, the kindergarten teacher makes use of play to promote the development of wholesome personality and to furnish leads to the real world outside the school. Playing housekeeping may lead to many worthwhile concepts, among them: division of labor in the home, cleanliness and sanitation, the relationship of the home and various neighborhood and community institutions or facilities, telling time and scheduling, and a host of learnings including how to get along with one another in sharing the playthings. Play and worthwhile construction activities merge and may lead to basic skill development.

The normally adventuresome spirit of the young child takes him inevitably into the wonders of the library and thus to books. Every kindergarten should give the child an opportunity to explore in books without the pressure to read. Often this exploration will result in reading for some of the more mature children, but systematic teaching of reading in the kindergarten is unwise and unnecessary.

A look back over the brief month by month summaries of the kindergarten program as it developed in Mrs. Nelson's class will

reveal the breadth of curriculum experiences, the rich opportunities to teach science, the exploitation of our national holidays for social studies, the reading and number readiness activities, the excellent provision of music and art media through which to stimulate and channel creative activity, and the daily emphasis on good health habits and safety. Such a curriculum is more than a play curriculum. It is more than a socialization curriculum. It utilizes both in the larger program of expanding the child's realization of the world of people and things.

CHAPTER 8

Learning Experiences of 6-Year-Olds

FIRST DAY FOR FIRST GRADERS

GETTING ACQUAINTED WITH EACH OTHER AND WITH THE CLASSROOM

There was much preparation to make that first day a success.¹ Early in May of the preceding school year, most of the children who would begin their schooling in Mrs. Metz's Grade 1 classroom that fall had had a "day of school" and had visited in the classroom with the children who were then in Grade 1. Mrs. Metz had, therefore, seen most of these children before and had gathered information about them from several sources. It was no surprise to her as an experienced first grade teacher that these children varied in chronological age from five years, nine months, to seven years, five months. Differences in mental age were usually greater still, as were differences in physique, home background, emotional security, and other factors affecting learning. How to organize the children into a classroom community and yet make ample provision for their individual development was a complex task which Mrs. Metz and all elementary school teachers face every year.

Mrs. Metz had planned the first day well. She knew that ex-

¹ The experiences described in this chapter occurred in Cragin Elementary School, Tucson, Ariz., 1937-1938. The teacher was Mrs. Elaine Metz and the student teacher, Mrs. Shirley Haines. These experiences were either observed directly by the author or told to him by either the teacher or the student teacher.

periences must vary widely and that activities must change often. She knew that the child's first concept of school life should be positive and rewarding. The child in a completely new situation needs to be recognized for himself alone as well as a group member.

A few minutes before nine o'clock one September morning, the children began to arrive in Mrs. Metz's classroom, most accompanied by their parents. For parents who might be bringing an offspring to school for the first time, this was an emotional moment. With most of the children, however, this first day of school was a time of high adventure, the anticipation overcoming the anxiety.

Mrs. Metz helped each child find a seat at one of the tables. She had prepared pencil holders at each place on which she had written the names of the children in letters 2-inches high. Although she had registered thirty children yesterday, she anticipated late registrants and had made five extra pencil holders. As it turned out, she used three of these; as the new children arrived, she quickly printed their names on pencil holders and found them a seat. (She had two vacant chairs left and these she hoped to use permanently at the back reading table.)

When everyone was settled in his place, Mrs. Metz marshalled the children in a circle at the front of the room. She took out a large rubber ball and said, "Now, children, I am going to pitch the ball to one of you; whoever it is must tell his name. That boy or girl may then pitch the ball to another. Always, the one who catches the ball must tell his name!" This activity continued until each child had an opportunity to tell his name at least once.

Next, Mrs. Metz used the bits of personal information she had compiled to guide a group discussion. The children were encouraged to tell about themselves and what they were most interested in. As some of the children told about a favorite story or picture book, a toy, or a pretty rock, Mrs. Metz suggested that they bring these articles to school tomorrow to share with the class. From this type of concrete personal material, Mrs. Metz fashioned learning activities, including some initial readiness in vocabulary building, number sense, or skill in observation.

For a quick and necessary change of pace, Mrs. Metz now went to the phonograph and started a record of a lively march. She asked the children: "What does this music make you want to do? Who will show us?" Several children volunteered and demonstrated by marching around the room. Presently, Mrs. Metz encouraged all children to follow suit. Next, she played music suggesting the hop of the rabbit. She asked, "What does this remind you of?" After some preliminary trials, one of the children demonstrated on all fours the characteristic hop of the rabbit. All joined in this activity with enthusiasm.

GETTING ACQUAINTED WITH THE SCHOOL BUILDING AND GROUNDS

As recess time neared, Mrs. Metz asked all of the children to sit in their places. She said, "We are going to have many good times together this year. Since there are so many of us, we shall have to take turns in throwing a ball, getting a drink at the fountain, and talking. When we do something together—all of us at the same time—it will be very helpful if everyone will look to me for the signal that we are ready. We have one magic word in our room. When you hear this magic word, everyone is to stop everything and be as quiet as a little mouse. Our magic word is *listen*. Our magic word helps us have fun without losing time. Do you like our magic word?" The children responded affirmatively.

Mrs. Metz then told them they would presently go on a trip around the school and the playground to see some of the people who helped children in school, to see where they would play, to see where they would eat their lunch, and to see where they would go when hurt or sick. She discussed with them how to line up and keep in single file, and then she led them into the hall and out the nearest exit. First, they had a pleasant walk across the broad green lawn, greeted a kind man who was mowing the grass, and stopped near the flagpole and front entrance where they had a chat with the other school custodians. Next, they walked onto the playground where other class groups were playing. Mrs. Metz pointed out various items of equipment to the children as they paused at several points.

On their way back to the classroom, Mrs. Metz took them by the school cafeteria to see where many of them would have lunch. They were fascinated by the big kitchen.

Next, they stopped for a visit with the school nurse who would always be ready to help them when they were hurt or sick. When they arrived back at the classroom, Mrs. Metz stopped at the door pointing, "Do you see our little happy bee? That is my name she is holding. Whenever you see her, you will know our classroom door." Discussing some of the events of the tour, she mentioned that some of the children had forgotten to stay in line when the group was walking through the grounds. "We make rules," she explained, "to help us save time and do better what we want to do." She called attention to the rules of a game. There is no game without rules. "Rules help us keep safe, too," she continues. "Do you know any rules about crossing the street?" Several children volunteered to name them. There followed a discussion of traffic safety, with specific reference to crossing the streets around the school building. Mrs. Metz demonstrated with an instructional aid the purpose of traffic lights to be found on an intersection near the school. She turned on the red light and asked, "What do you do when you see this light?" She worked carefully and slowly to give each child an opportunity to respond to a traffic light situation to see if that child really understood what to do. After a prolonged practice period with the traffic light aid, she summarized, "Rules are good to have when crossing the street, don't you think?"

Then Mrs. Metz said, "Very soon we shall all have lunch. Some of us will go home for lunch, and some of us will remain in school and have lunch in the school cafeteria. I have something to say to those who will eat in the cafeteria. We must line up one after the other to be served in a cafeteria. If anyone should push or move quickly without looking, he may cause another to spill his tray. Four rules will help us. First, stay in line to be served, and second, look before you move. Third, when we are sitting at the table after getting our food, we are still careful not to jostle others. And fourth, when we are finished, we take our own tray and stack it on a table. Then we go to the playground."

The children going home for lunch formed a line and walked to a designated place either to wait for their parents or walk home. The teacher took the others to the cafeteria for their first meal at school. After the children had learned how to go to the cafeteria or playground areas by themselves, one teacher at a time in the primary group supervised the children, releasing the other teachers for a more leisurely lunch period either in the faculty room or away from school.

LEARNING HOW TO WORK AND PLAY TOGETHER

After lunch, Mrs. Metz continued to work on her theme for the day, "How We Work and Play Together at School." She discussed the significance of the bells which heralded the beginning as well as the ending of the lunch period. "Tomorrow and every day after that," she told them, "I will stand at the outside door which we used to go to the playground when the bell rings for all of us to come in from the playground. It is a custom in our school for the children to line up outside the door and wait for a signal from their own teacher before entering the building. Will you do this for me tomorrow? It will save us much time. David, will you tell us what the rule is about coming into the building at the end of the lunch hour?" This led to responses by several children. In this way, Mrs. Metz found out if the children had understood her directions. She stimulated oral expression and at the same time used immediate experiences to teach some preliminary citizenship concepts.

Next, Mrs. Metz distributed drawing paper and crayons to each child as she discussed with them their next activity. She said, "I have been wondering what you liked most about school today. Would you draw a picture of what you liked most for me?" She suggested that the children use several colors in their pictures and make their pictures large enough to cover all of the paper. After the pictures were done, some of the children were encouraged to tell the class about their pictures.

The paper and crayon activity indicated to Mrs. Metz something about her children, including some manifestations of muscular co-

ordination, interest pattern, attention span, emotional maturity, and conceptual maturity. Most children come to Grade 1 with great anticipation which, if capitalized upon, helps the child to develop sustaining and positive concepts of school life. However, the attention span is very short; thus, the teacher frequently changes the pace and the scene of the learning process. School should be, for the young child, a continuing series of adventures in the types of things which interest children at that level. Each child's individual interest pattern should be discovered and capitalized upon whenever possible.

After the drawing and oral interpretation activities, Mrs. Metz read to the children from a book with many colorful pictures. She shared the pictures with the children before turning the page. The children listen with a lively sense of participation in the events of the story.

A COMPREHENSIVE READINESS PROGRAM

Readiness simply means being "ready to learn." Teachers are concerned about readiness as pupils approach any aspect of the curriculum. Readiness is an expression of the child's mental, physical, emotional, social, and experiential maturity. The school can do little to aid the development of the first two—mental and physical maturation. Teachers should learn how to observe and more expertly determine when maturation takes place. Emotional maturity of the 6-year-old is a product of the home and family climate. The school has little effect on it. Social maturity, while it awaits various stages of organic maturation, can be aided significantly by the kinds of social situations provided by the school. The school cannot overcome immediately a deprivation of experience which a home or community situation has caused, and, yet, the school does operate strongly from the outset in the developmental pattern of the child's experience. The possibility of developing readiness in the child as a deliberate policy has its distinct limitations. The most significant aspects of readiness are largely beyond the province of the school, but the school *can and does influence profoundly the experimental*

background of the child. It can and should carefully pace learning experiences with maturation.

Mrs. Metz is mindful of readiness as she plans and guides the experiences of children in her classroom during the first week of school. She knows that settling down to a comfortable and secure routine helps readiness. Healthy social relationships among and between the children and the teacher help, too. She organizes learning experiences in the classroom which aid in the development of these aspects of readiness while at the same time enriching the experiential background of the children for further concept development.

BEGINNING READING FOR SOME CHILDREN

A child's earliest reading activities grow out of his own experiences. There can be no comprehension of written symbols until the reader brings experience to the printed page. Mrs. Metz's carefully planned experiences in readiness were designed to lead some children who were mature enough into beginning reading. The beginning reading of these children emerged out of the experience stories which the teacher and the children composed about the actual experiences of the living and learning situation. These stories were about the children themselves, about their favorite animals, and about the excursions and other events of their daily living. The stories were dictated by the children to the teacher and were, therefore, primarily in their own language. These words, taken out of the functional oral vocabularies of the children corresponded rather closely with prescribed vocabularies in basal reading textbooks. During the events leading up to beginning reading for those few children who were ready, some incidental reading activities occurred. Some children learned words quickly from those which Mrs. Metz used to label objects around the classroom. Some learned words from the composition of stories as the teacher writes them on the blackboard. Some advanced children learn to read almost immediately from the initial reading of experience stories. Some children had already learned to read before entering school.

When Mrs. Metz uses an experience story for systematic reading instruction, she first develops the story out of group discussion and writes it on the board. Later, she prepares one on chart paper and another copy of it on oak tag or a light-weight poster board. The latter she cuts into sentence strips. She makes extra cards with word groups and separate words. She uses these charts with the more mature children who are seeking to learn to read and write. When each child of this group has made a definite beginning with sentence, phrase, and word recognition, she helps that child to start in the pre-primers of the basal reading series of textbooks. She continues to involve the child in the development of experience stories and their reading along with the initial reading of formal materials. All children in the class eventually are helped to participate even as nonreaders in the development of experience materials and in practice with them. The general plan for the use of these materials is to help the child grasp the scope and meaning of the story as a whole in the gross, gradually recognize the differences in the sentences of the story, differentiate phrases and other word groups from the sentences, recognize individual words on sight, and use some preliminary word analysis techniques to help identify difficult words. The sentence strips and word cards are matched with the corresponding words on the chart paper. The story can be reconstructed in a pocket chart with the sentences and word cards on the oak tag paper. Individual word cards may be used as flash cards for vocabulary drill after these words have appeared several times in the context of the story. In this way, children build up a reading vocabulary which soon enables them to progress to book reading in the developmental program.

The readiness program continues for most children in Mrs. Metz's group as she helps a few of the more mature children make a beginning in reading. Each begins in his own way and in his own time. Experience stories are introduced at first with the whole class participating. This whole class participation will continue as the group composes stories about activities affecting the whole class. Mrs. Metz knows that many children do not actually read during these activities, but the making of an experience story engages chil-

dren in several communication skills in addition to reading and gives them a feeling for the latter. With the individual children who evidence the ability to profit from systematic instruction in reading, individual experience stories are made. The drill with sentence and word elements of these individual stories will be more intensive than the group activity of composing a story and subsequently reading it. As individual children, one at a time, demonstrate sufficient sight vocabulary to go into a pre-primer, Mrs. Metz takes the child aside or at her desk and begins individual instruction in developmental reading. She spends only a few minutes with each child in this instruction each day, but it soon pays dividends in the increasing independence of such children to read a variety of easy beginning materials on the reading table. As Mrs. Metz sits next to an individual child to help him read in the pre-primer or primer, helping him interpret the pictures, helping him with verbal context, or telling him a word that the child cannot learn any other way, the other children in the room continue with their readiness experiences through seatwork, individual projects, and "reading" of picture books.

THE PROJECT ON PETS

The author followed closely a 13-day-sequence of learning experiences in Mrs. Metz's classroom during the spring of the year. This sequence of experiences represented a project on pets. During this time Mrs. Metz had a student teacher in her room. This student teacher, Mrs. Shirley Haines, took a very active part in all of the proceedings.

EVENTS LEADING TO THE INITIATION OF THE PET PROJECT

A farm project immediately preceded the pet project. The incubation of eggs in a home-made incubator was, in a sense, a part of both projects. It started with one and ended in the other, creating a definite link between the two projects. Another link was provided by an experience chart on animal sounds, including both pets and farm animals. Mrs. Haines helped the children to understand what

was about to happen to the eggs by reading them a story about a chicken hatching from an egg. She shared the large pictures of the book with the children as she read. Keeping baby chicks in the classroom led to keeping other types of animals there.

The way in which the teacher and student teacher managed the hatching of eggs in the classroom will be of interest to the reader. The eggs did not hatch until the project was several days old; however, the learning experiences around this theme began earlier. These experiences are summarized here for the convenience of the reader.

The films, "Care of Pets" and "The Red Hen," were projected in the classroom. A discussion preceded them to orient the children as to what they were about to see and what things to look for. After the movie, the children chatted freely about the kinds of pets they had and what they did to care for them. From the material in the movie "The Red Hen," the class talked about the three long weeks it took to hatch eggs, how the mother took care of her chicks, how she felt about them, what the baby chicks ate, and the way they drank.

The children talked about having chickens in the classroom and perhaps hatching them. It was then stressed that the eggs were not the kind for eating but special eggs from the hatchery. "If we hatched the eggs here, what are some of the things we would need?" asked Mrs. Haines. The class discussed what an incubator was and why it was necessary. "We would need something to show us how warm and how damp the eggs were in the incubator," continued Mrs. Haines. This led to a discussion of the meaning of thermometer and hygrometer, using a vocabulary the children could understand. The children decided they would need a place for the chickens after they were hatched. It was decided that this should be a cardboard box with a light bulb in it for heat to dry the chicks and keep them warm. One child remembered that in the movie the baby chicks did not eat the first day. She suggested that they needed to buy the food and have it ready for them when they were hungry.

SETTING UP THE INCUBATOR

The children asked where the class could get the things needed. They already knew, of course, that the eggs would come from the hatchery. Gary volunteered to look for the large flat box needed to put the chicks in after they were hatched, and several of his friends offered to help him. The incubator and thermometer were to be provided by the teacher.

On the third day, the incubator was going and the eggs had been brought from the hatchery. The children discussed how long it would take the eggs to hatch. They were told that these eggs had been in an incubator at the hatchery over two weeks; therefore, they had only five or six more days to wait until the eggs would hatch. Larry wanted to know which day of the week that would be. The teacher showed them the calendar, and Larry counted five days from that date and marked it with a pencil so everyone would know when the big day had arrived.

Practice was given to the class in reading the temperature and humidity, both inside the incubator and in the classroom. The children were informed that the temperature in the incubator should be 100 degrees and the humidity 85 percent in order for the eggs to hatch. When each child found these numbers on the thermometer and humidity indicator, a committee of two children was chosen to check the instruments every hour. It was understood the committees would be rotated so all the children would have a chance.

Numbers were employed by counting twelve plastic eggs in a paper carton. By applying the action principle, it was learned that twelve made a dozen. They counted various objects and also found that twelve children made a dozen as did twelve wooden spoons. Twelve beads were counted on the abacus. One half dozen was found in the same way. Basic number facts were demonstrated with plastic animals by making up number stories. After some practice in making-up stories or problems, the class was divided into two groups. One group thought up questions and the other group answered them. Then the two groups switched.

Experience stories were written about the eggs and the incubator. As the teacher helped individuals and groups make charts, others in the class were eager to share information; thus, a real need for reading was developed.

The children then drew pictures of their own pets or of the pet they would like to have. Each child had an opportunity to show and tell about it.

The class learned to sing "Sing, Said the Mother" and other songs by rote. Creative activity was provided by imitating different kinds of animals. The tone bell blocks were chosen for enrichment, and more verses were made up about other animals.

KEEPING A PET TURTLE IN THE CLASSROOM

Meanwhile, other events took place. On the first day, some of the children read the story in the basic reader about the pet, "So Slow," a turtle who was kept in a classroom. This led to a long discussion of this pet.

Darrel, one of the children in this reading group, brought his turtle to school the next day to share with the others. He was immediately besieged with questions about his turtle. Was it old? What did it eat? Would it bite? Why was the rock in the water? Where had Darrel gotten him? Darrel could answer many of these questions, but there were some that he could not. The children realized that there were many more things they would like to find out about turtles. They discovered several ways to find answers to their questions. As the children suggested various methods, the teacher wrote them on the board. They decided that some of the answers could be found in books. Pictures would also help, and the teacher could read material they could not read for themselves. They felt that some things could be learned by watching the turtle carefully. One child suggested that an authority on animals and pets could tell them many things which would help answer their questions; for example, a pet shop owner. An animated discussion followed on the possibility of actually visiting a pet shop. The teacher suggested they discuss the proposed trip later since prepara-

tions and arrangements for such a trip required careful planning.

The next day, the teacher had provided an arranged environment for the children, the purpose of which was to increase interest in the pet project. This environment included: a turtle which could be kept in the room since Darrel had to take his home, and a reading table which provided many books in which the children could read or look at the pictures. These books contained information about such animals as hamsters, ducks, dogs, cats, rabbits, birds, reptiles, and turtles. Also in the room was a bulletin board entitled, "Pets We Know," which had pictures of various pets labeled so that the children could read them. Interest in the environment led into group discussion. The children immediately wanted to see the turtle. They all looked and decided that he should be called "Timothy Turtle." A committee was chosen to take care of his daily needs. They decided that his needs included fresh water, food, and a light place. It was discovered that he did not like to stay in the water all the time so the children found a rock for him to lie on.

The bulletin board created additional interest in different kinds of animals which make good pets. The children were eager to tell about their own experiences. The next morning during a sharing period, each child described with much detail his pet or pets. From this description, they developed their own experience stories. The teacher provided necessary help with spelling and used this opportunity to stress correct letter formation. After finishing their individual stories, the children felt that they should make pictures of their pets to accompany the stories.

A DAFFY DUCK COMES TO SCHOOL

Next, Bobby brought his pet duck, named "Daffy Duck," to school on the fourth day. Everyone crowded around the table and wanted to see him. Since there were so many children around the table, few could see. The children decided that everyone should sit down so the teacher could bring Daffy Duck to each table. Daffy walked up and down on all the tables in turn. The children

stressed by the teacher. Peggy added, "We must not beg for things in the shop." A chart was developed on, "What We Want to Know."

A pretend game was played in which each child became his favorite pet. By watching the pantomime, the other children tried to guess answers to questions like these: What sounds do you make? What do you look like? What do you eat? What tricks can you do? Factual information about animals was learned from this game.

The big day had arrived, and all were eagerly awaiting the trip to Jackie's Pet Shop. The children took turns reading the behavior rules which had been written on a chart. Additional rules were suggested by the children. Then the discussion turned to "What We Want to Know." At last, the children climbed into the automobiles and were driven to the pet shop. Everyone assembled on the sidewalk in front of the pet shop awaiting a signal from Mrs. Metz. They were met at the door by the pet shop owner. She suggested that the children file first by the puppy cages on the right. Of special interest was the hamster cage. After the children had seen all of the animals in their cages, the owner allowed them to hold some of the animals in their hands. Mrs. Metz showed some of the children a baby rat which had no hair and was so small it was about the size of her little finger. There were other things to see besides the pets. Pet supplies were also sold. Some of the children were particularly interested in eating bowls and dog brushes. Although they were reluctant to leave the pet shop, the time came to return to school.

Back in their own classroom, a little weary, but too excited to notice, they plunged into a discussion of what they saw, and, more important, what they learned from their trip. On the following day, the discussion of the trip continued. They discussed writing a letter to the pet shop owner to thank her for allowing them to visit her shop and to tell her how much they enjoyed the visit. Through a directed writing lesson, a letter was composed and dictated by the pupils to Mrs. Metz at the blackboard.

THE EGGS HATCH IN THE CLASSROOM INCUBATOR

At last the chickens hatched, and the children were very excited. They had been very concerned about some of the chicks who appeared to work very hard before breaking out of their shells. They noticed, however, that a period of intense pecking would be followed by a period of rest. The chicks would then return to their hard work. When the chicks finally broke out of their shells, they were limp and quite damp. After a while, the children noticed that the chicks became dry and fluffy. Mrs. Metz exploited this situation for much work in reading and language arts.

After the eggs had all hatched, the children began work on an animal mural. When all materials were finished, they arranged the mural on a large bulletin board with the help of the teacher.

THE DEATH AND FUNERAL OF THE TURTLE

A sad experience was shared by the children when their pet, Timothy Turtle, died. They decided he must be buried, complete with funeral. A marker for his grave was made from ice cream sticks, and flowers from the classroom bouquet were placed on it. The sadness did not prevail for long, however, since a new turtle was given to the class. The children wrote the donor a thank-you letter for the new turtle. They named the new turtle "Timothy Turtle II." He provided further experiences in learning.

THE CULMINATION OF THE PET PROJECT

The children decided to assemble many of their chart stories and drawings into a large book. They entitled it, "Our Pet Book." One of the children mentioned that his brother would like to see their big book as well as their pets. Other children agreed that others might like to visit their classroom. The children decided to invite another class to visit, attend a movie, and see their work. The group selected several children to write, decorate, and deliver the invitation to the other class. These children worked independently with some guidance from the teacher.

The thirteenth and final day of the project arrived. Last minute details occupied the children as they waited for their visitors. When all was ready, they discussed what a good host and hostess should do. There was a short rehearsal with a few of the children playing the part of the visitors. The other class arrived on time and enjoyed seeing and hearing about the classroom pets. They were shown the experience story book, from which several of Mrs. Metz's children read stories. In addition to the mural, the visitors were shown many examples of art work. At the conclusion of the film on animals, the visitors thanked their hosts and went back to their own room. After the visitors had departed, Mrs. Metz suggested that the chickens were old enough to have a home of their own. She had previously sent permission slips home to find out which of the children could take one of the chickens home for a pet. The names of the children who had permission from their parents were placed in a box and a drawing was held. Much suspense and excitement prevailed. Every chick found a new home with a delighted child.

BASIC SKILLS ARE EXTENDED

The foregoing experiences led to many worthwhile learning activities in the basic skills. The children engaged in daily group reading. Many of the stories in their basic readers were about animals and their adventures. Animals became the subject of arithmetic activities, especially those leading to the mastery of the addition combinations.

SUMMARY

The child who comes to Grade I of the elementary school is an action-seeker. He wants things to happen, and he often makes things happen. He has an insatiable desire to observe, to explore, and to ask questions. He constantly looks out upon his world with this point of view. Mrs. Metz's children demonstrated this, especially in their pet project. The child is looking for better ways of understanding his world. He can generalize if experiences are rich and varied enough, but he is not interested in the abstract itself.

His abstractions come after such questions as, "What would happen if ———?" and he hurries on to the next question or to the next experience without pausing to think, "I have learned such-and-such." The teacher can help to guide the development of self-evaluation through activities like that of the discussion and chart lesson on "What We Learned at the Pet Shop."

The 6-year-old is not much interested in the past or the future. He is almost completely absorbed in the present. He is curious about every moving, living thing. He wants to know where animals go in winter, what is in the birds' nest, or what he can buy with his dime. His activity is ceaseless; his almost continuous physical activity and his pattern of interests are related for he actively *seeks out his world and tries out his own physical powers in his interaction with it*. His attack upon his world is broad, tentative, and not characterized by fine detail or sustained effort in one activity. Out of his many brief encounters with the world and with his peers, there is a cumulative growing-up process. It takes time to grow, however, and teachers in the primary grades understand that no amount of pushing can hurry the growth process. They *try to exploit the opportunities of the immediate present, for it is only in this context that the child can be influenced and guided*. Mrs. Metz's first-grade activities met this criterion in the best fashion. A teacher of such caliber is a great asset to the community and to the teaching profession.

CHAPTER 9

Learning Experiences of 7-Year-Olds

This chapter's narrative¹ is based primarily on a record of the program which the pupils presented on the penultimate day of the school term. It was a comprehensive report on the theme, "What We Learned This Year." It was in chronological sequence and indicated the emphasis the children placed on the various learning experiences which they shared during the entire year. It illuminates those concerns which children at this age consider most important. It indicates the types of experience which children retain and best extend their skills and concepts.

RECALLING THE YEAR'S HIGHLIGHTS

Mrs. Rucker began by asking the children to think back over the work they had done during the year and to suggest what they had enjoyed most. After individuals had indicated their choice and a list had been made on the chalkboard, she gave the entire class a chance to vote on the activity most enjoyed. "Who would like to begin by coming to the front and telling our parents what he most enjoyed doing this year?" Jean was recognized and came to the front of the classroom to stand by Mrs. Rucker. With a broad smile she said without hesitation, "I liked making the 'animules'"

¹The teaching situation described and analyzed in this chapter was that of Mrs. Norma Rucker and a second grade class in Cragin Elementary School, Tucson, Ariz., 1937-1938. Mrs. Rucker now teaches a second grade in Park Ridge, Illinois.

CHAPTER 9

Learning Experiences of 7-Year-Olds

This chapter's narrative¹ is based primarily on a record of the program which the pupils presented on the penultimate day of the school term. It was a comprehensive report on the theme, "What We Learned This Year." It was in chronological sequence and indicated the emphasis the children placed on the various learning experiences which they shared during the entire year. It illuminates those concerns which children at this age consider most important. It indicates the types of experience which children retain and best extend their skills and concepts.

RECALLING THE YEAR'S HIGHLIGHTS

Mrs. Rucker began by asking the children to think back over the work they had done during the year and to suggest what they had enjoyed most. After individuals had indicated their choice and a list had been made on the chalkboard, she gave the entire class a chance to vote on the activity most enjoyed. "Who would like to begin by coming to the front and telling our parents what he most enjoyed doing this year?" Jean was recognized and came to the front of the classroom to stand by Mrs. Rucker. With a broad smile she said without hesitation, "I liked making the 'animules'

¹ The teaching situation described and analyzed in this chapter was that of Mrs. Norma Rucker and a second grade class in Cragin Elementary School, Tucson, Ariz., 1957-1958. Mrs. Rucker now teaches a second grade in Park Ridge, Illinois.

best of all." She referred to an art activity involving papier-maché and clay sculpture during a class project on how animals grow. "I think they are about the funniest things I have ever seen, and the most beautiful! I liked them even more than Thidwick," she exclaimed. (This was a reference to a Dr. Seuss book, *Thidwick, the Big Hearted Moose*, which had been a favorite book of hers this year.) Mrs. Rucker thanked Jean for her contribution and recorded it on the chalkboard.

Then she recognized Loui. Loui recalled the day the student teacher, Mrs. Miliana Rosenblum, had brought a mother cat, her baby kittens, and her adopted chipmunks to the classroom. She liked best creating the story about their visit. Jeff had been chief editor of the class newspaper which had been published each Friday during the spring months—this he most enjoyed. Gary recalled the trip to the airport and singled it out for praise. James liked the activity in which the pupils made plaster of paris pins and earrings for Mother's Day presents. This reminded Michael that he had liked making a ceramic ash tray at Christmas time for his mother. Tommy liked the trip to the dairy, especially the chocolate milk and balloons which the dairy people had given away. He recalled, too, how the children had enjoyed the fish in the large pond in front of the dairy office building. Upon their return, from the stories they had written as well as the pictures they had drawn, Mrs. Rucker was surprised to learn that the children had been as impressed by some of the giant gold fish in the pond as by the cows and the dairy equipment.

Mike remembered that on their trip to the post office, they had been able to see what goes on "back of the window." The thing that most impressed him was the speed with which mail was thrust into the post office boxes. Christie remembered the day when their daffodils had bloomed, the culmination to a rather extended project on how plants grow. She was the "green thumb" of the class. All of her plantings had flourished while some others had not. She had achieved recognition from the other children for her work in this project.

The list which Mrs. Rucker had been making on the chalkboard now looked like this:

| | |
|---|-----------------------------|
| Making "animules" | Mother's Day presents |
| A story about the kittens and chipmunks | Ceramics at Christmas |
| The class newspaper | Our trip to the dairy |
| The trip to the airport | Our trip to the post office |
| | Our plant project |

"Now, it seems to me that the first two we have listed are about our projects on animals. Could we put them together under 'Our project on how animals grow'?" she asked. The children agreed. Mrs. Rucker then took an informal vote to see which of the learning experiences of the year appealed to most of the children. The results of this poll indicated that the children remembered with the most pleasure and satisfaction their two projects on animals and plants. The continuing project of the class newspaper ranked third in the poll. Mrs. Rucker then suggested that the children recall these three projects in more detail for the benefit of the parents, using the pictures, posters, stories, books, etc., that were on display around the room. Since they had started their plant project first, Christie was asked to lead the discussion of their study, "How Plants Grow."

HOW PLANTS GROW

"First," Christie began, "we put some lima beans in a bowl of water and let them soak all that night. When we came to school the next morning, the beans were much bigger and there was no water left in the bowl. Mrs. Rucker showed us how to take the covering off the bean and pull it apart so we could see the little tiny plant that had begun to sprout inside. We put some of the beans on cotton and put them between two pieces of glass. We kept the cotton moist. The two pieces of glass held the cotton and the beans in place. We put rubber bands around the glass. Then we set the glass on its edge in the water. We watched the roots grow down and the stem grow upward. Soon, green leaves came on the stem. We watched the bean grow every day. It did not

grow long because there was no soil. In another glass bowl we planted some beans up against the glass in some planting mix soil. We could see it grow every day, too. It grew into a large plant."

Christie went on to explain a planting chart which was part of a display. It had the names of various types of seeds and bulbs which they had planted in planting boxes and pots in the classroom, with the dates of planting and the dates they came up. She explained also how they had brought plants from home for transplanting and how they had learned to care for these plants, too, they had watched a stalk of celery turn pink when they placed it in a glass of water that had been colored with red food coloring; they had observed carefully the veins in the stem and leaves as these filled with the red water.

They had learned to identify leaves by comparing those they had collected with pictures in a science book. They assembled information on types of leaves for a worksheet which Mrs. Rucker prepared for the class, and they wrote stories about their search for different leaves like those pictured in the science book. They pressed leaves between the pages of a large wallpaper sample book and later mounted them on poster board carefully labeling each, and covering with a plastic film. They wrote many reports and stories about their activities.

They learned about trees; some dropped their leaves in winter, others did not. One way to identify trees was to know their leaves. David had collected leaves from different types of trees and shrubs. He drew pictures of several tree types, and made a display of their leaves. Then he wrote a story about them. This was his story:

This is a story about my picture and leaves. Their names are euonymus, oleander, greasewood, pine, chinaberry, and eucalyptus.
David

Nearly every child in the room wrote a story about the planting of beans. Here is one:

I put beans in a glass of water. I left them in the water overnight.

In the morning I put them in some soil. I watched them every day. One day they came up.

Louie

Mrs. Rucker helped the children recall all of their experiences with the plant project by handing out copies of three ditto sheets which had been prepared during the project as a result of teacher-pupil planning. These were:

WHAT WE WANT TO FIND OUT

What do plants need to grow?
 What kind of soil is best?
 What do plants need to grow?
 How are leaves different?
 How are seeds scattered?
 How long does it take plants to come up?

WHAT WE WANT TO DO

We want to plant seeds and watch them grow.

We want to do experiments with seeds using sponges, blotters, and cotton.

We want to bring pictures from home about plants and seeds and write stories about them.

We want to see how plants make new plants.

We want to choose our own projects, draw our own pictures about them, and write our own reports.

We want to learn to spell our new words.

Some of us want to write number stories about the number of days it takes different plants to come up.

Some of us want to write poems and riddles.

Some of us want to write about how seeds are scattered.

EXPERIMENTS

Lillian and Trudy planted grass seed in a sponge. In one week it was covered with green grass.

Bruce and Jeff brought soil from the playground and planted beans in it. Then we planted beans in rich soil from a flower bed. The beans in the rich soil grew much bigger.

We planted bulbs in a bowl with rocks and water. They had white flowers 22 days later.

We planted carrot tops in a dish with rocks and water. They sprouted a green top again.

James brought a sweet potato. We put it in a glass of water and placed it in a cupboard where it is dark. It grew roots and leaves. We put it in the light and it made a large vine.

We learned how plants "drink" water. We put celery in a glass of water with red food coloring. We watched the stalk and leaves turn pink.

We made a moist, covered terrarium. The plants are growing fast.

HOW ANIMALS GROW

Mrs. Rucker explained to the parents that the projects on plants and animals both had the same emphasis in Grade 2, namely, how living things grow. In this context, the child learns the basic conditions for normal growth; food, habitat, care of the young, protection, behavior in winter, and a host of similar considerations of interest to the pupil as he explores his immediate environment. The plant and animal projects overlapped each other. Many of the plants reached maturity long after the interests of the children turned to a focus on animal life.

Two events catapulted the children into the animal project. First, the birth of live-born fish in the aquarium excited and intrigued the children. Mrs. Rucker passed around a story one of the children had written about this event. It read:

We have two new baby fish! They were born yesterday. They are black mollies.

Cathy

Mrs. Rucker asked Paula to explain the second event, a discovery that she had made. Paula told the parents that Michael had brought them a surprise one morning when he came to school earlier than usual. It was a turtle. He placed it in the class terrarium but did not tell anyone except Mrs. Rucker about it. Paula continued, "I was walking past the terrarium about half an hour after school began, and suddenly I saw something move in the terrarium. At first it scared me but when I looked a second time I saw it was a small green turtle. He was trying to bury him-

self in the peat moss." Thumbing through the stories that various children had written during that period, Mrs. Rucker found this one and passed it around:

We have a new turtle. Her name is Myrtle. She is very young.

Jean

Mrs. Rucker then told the parents: "This was the beginning of many animal visits to the classroom, and each visit of an animal touched off considerable creative writing by the children. I took this opportunity to do some rather intensive work with them on their writing skills. For instance, I wrote Jean's story about the turtle on the chalkboard and taught them how to indent the first sentence of a paragraph. Also, we talked about the sentence itself. We decided that a good sentence said something interesting and did not leave us wondering what happened. When we finished writing what happened, we placed a 'stop sign' or period at the end of the sentence. We started all new sentences with a capital letter to show when we began a new thought. We learned, too, that, because everybody's name is important, we capitalize the first letter of a name. We decided, as we shared each others' stories, that the best ones did not use the same words too often; we then tried to learn some new ways of saying what we wanted to tell. To find new words to use, we looked in the picture dictionary, asked a classmate for suggestions, or asked the teacher. The children brought their stories to my desk one at a time for advice. I was able to see if they were learning these writing skills and to help them improve their stories. If, in their attempts to use new words, they chose words expressing a meaning other than what they intended, I would suggest a more suitable word and explain how the word selected by the pupil could be used later in another sentence or story. Some of our children do quite a bit of exploring into words, their spelling and meanings, just for the fun of it. I encourage this practice because it not only expands their vocabularies but tends to lead to enrichment of their learning in many directions. They keep a spelling list of words they have found difficult in writing activities, in addition to words from the

spelling textbook. Their list is their own, not quite like that of anyone else. They like a list of their very own. As they work with the spelling and meanings of words, several of the children like to make their own picture dictionaries. You can see some of these on the shelf by the windows."

Mrs. Rucker went on to explain how she worked with the class on experience stories to enrich their reading. When a child brought in an ant farm, she capitalized upon the intense interest it aroused to work, first with the class as a whole and later with individuals, on reading comprehension and skills at several levels. It gave her an opportunity, also, to emphasize the use of the question mark and the exclamation mark in the context of the stories which the children dictated to her. When Lynda wrote an original story about her desire to own a rabbit, Mrs. Rucker saw an opportunity to call attention to her use of commas. A general discussion of how to use commas ensued. Every child looked back at his own stories to check his own use of commas and many developed new understanding of their use. Mrs. Rucker related how she explained the concept of the comma. "I asked the children to line up at arm's length and walk around the room, and we would play a game with commas and periods. When I said 'comma,' they were to slow down almost to a stop and then move on at a steady walk. If I said 'period,' they were to come to a complete stop and wait for me to say 'go' again. Later, I read or made up sentences as the children walked around the classroom. When my speech would pause for a comma, they were to pause in their walking. When the inflection in my voice indicated the end of a sentence, they were to stop. We had fun playing this game. If we did not listen carefully, we ran into another person."

Then Mrs. Rucker passed around the story that Lynda had written which gave rise to the activities on the period and the comma. It read like this:

IF I HAD A RABBIT

If I had a rabbit, I would love him. I would play with him every day. I would feed him and give him fresh water. Every night I would

give him a bath and brush his soft, white fur. I wish I had a rabbit.
Lynda

Mrs. Rucker pointed out that this had been the longest story Lynda had written up to that time. Its use of several ideas and an extensive vocabulary demonstrated the good progress she was making in language arts. Children at the second-grade level, typically, do not write more than two or three lines to their stories at the beginning of the year, and the complexity of their original stories grows progressively in a good learning environment. As a teacher observes and guides this language development in the way Mrs. Rucker has done with her children, evaluating and reporting pupil growth is not guesswork. She does not force the mechanics of language on the children at this level, and yet, the able children need some systematic instruction if their creative writing is to improve at a rate commensurate with their ability. When this instruction is correlated with their own writing motivation and helps them do better what they want to do, it is appropriate. Most children want to feel progression in their learning. The urge to continuity is great. A child wants to progress from manuscript writing, for instance, to the "grown-up" writing of the cursive style. The able child demands, as one child in Mrs. Rucker's class did, an opportunity to "use a comma here and there." If instruction is to keep pace with maturity and interest, it will be available as the child reaches out to grasp new concepts and skills.

"We really had an interesting time with our punctuation and other rules when Bill composed this poem," Mrs. Rucker continued. She read the poem.

THE ANIMALS

I knew a little puppy,
That knew a little man,
That knew a little kitten,
That knew a little rat,
That knew a little mouse,
And they all lived together
In a great big house.

Bill

"First of all," she said, "a poem does not have to be indented as does a paragraph and each line does not have to make a complete sentence or close with a period. Thus, we found out that the writing of poetry was different from the writing of stories."

Again, the difference in the forms of writing was not pressed upon all children in the class, some of whom were too immature to understand, but for the more able child this instruction appeared necessary at this point. It is important that the teacher not use a *negative approach to these mechanical features of language* at this level. No child should feel loss of face for not having mastered instruction which is beyond his present ability to understand. Comparisons in the classroom should be minimized; each child should be recognized for the success he may be having at his own level of achievement.

Mrs. Rucker went on, "After nearly a full week of creative writing and new skill development during which I also sought to broaden and deepen the interests of the children in the study of animals, we had an opportunity to organize our project better on Monday of the second week. On this day Tommy brought a lizard to class." She asked Tommy to come forward and tell how he had caught the lizard. "I found it in our patio," Tommy began. "It was in my mother's flower bed. I had a hard time catching it because it is very fast. When it tried to run across the grass, I dived and caught it. I asked my mother for something to put it in. She gave me a glass jar. I punched holes in the lid to give it some air." Mrs. Rucker asked Tommy what the class decided to do when he brought the lizard to school. He said some of the other boys and girls asked him what the lizard ate. He did not know at the time; he thought it ate bugs. The class had a discussion about lizard food but no one was sure about what a lizard ate.

Mrs. Rucker related how the children had rushed to the book shelves and the reading table to find books in which the desired information might be found. "Tommy, did you find your answer," she asked. "Yes, we found what we were looking for but we found out a lot of other things, too. We read about all kinds of animals."

Mrs. Rucker then told how the interest in the lizard had de-

veloped into a general interest in animals. When the children came to class the next morning, she had surprised them with a bulletin board of animal and bird homes. She had suggested that they decide which animals belonged to each of the homes. After a lively discussion, they had successfully identified the homes. Also, overnight, she had procured additional books on animals, and for a time provided an exploratory atmosphere as the children exhausted the new books. Among these new books were some she had re-written from adult materials and brought down to the reading level of some of the advanced children who read above the second-grade level. Several children who had brought books from home were encouraged to read this material to the class or to smaller interested groups.

"By mid-morning," the teacher related, "we were ready to organize our project. We began our planning by deciding what we wanted to find out about animals." She passed around a sheet with the questions which the children had asked, reading as follows:

WHAT WE WANT TO FIND OUT

- Which animals are friendly and which are not friendly?
- Which animals sleep during the day and go out at night?
- Where do animals sleep?
- Where do animals go when it rains?
- Why are mammals called mammals?
- What kinds of noises do the animals make?
- How do desert animals get their food?

A similar sheet containing the suggestions the children made about class activities was passed around. It read:

WHAT WE WANT TO DO

- We want to have the Desert Museum man to visit us and bring his animals.
- We want to make some animals out of papier maché and clay.
- We want to see some animal movies.
- We want to write a play about the animals and have animal costumes.
- We want to write more animal stories.

Mrs. Rucker then asked Loui to tell the group about the visit of the man from the Arizona-Sonora Desert Museum and his animals. Loui spoke fluently without notes as she talked about "Manager Hal," as he is dubbed, beloved of children and well known for his television appearances. He had brought with him "La Vaga" the ring-tailed cat, "Diablo" the wildcat, a badger, a kangaroo rat, a coatiundi, a king snake, and an elf owl. She told how the children had learned that the king snake could kill a rattlesnake and how the elf owl built its nest in the giant saquaro cactus after the woodpecker had pecked a large hole in it. She related how "Manager Hal" had put the ring-tailed cat on the head of a boy to show that it looked like a Davy Crockett cap. He told them about other animals of the desert.

Mrs. Rucker then asked Chuck to come forward and tell the parents what the class had found out about mammals. Chuck said, "Mammals are born alive. They have hair. The mother gives them milk. The parents protect them from danger. They are warm-blooded." "Can you name some animals that are mammals, Chuck?" asked the teacher. He named the dog, the horse, the whale, the cow, and the cat.

Next, the teacher pointed out some of the pupil crafts, posters, and booklets which she had displayed on top of the book shelves along the windows. Also, there were photographs of bulletin boards and other displays that had long since been replaced.

Mrs. Rucker asked Bobby, "Do you remember the animal visitors Mrs. Doolen's first-grade class sent us to enjoy?" "Yes, baby ducks!" Bobby responded. He recalled with pleasure that he had filled the wash basin with water so that the ducks would have a place to swim. Two children at a time could watch them swim.

"What did Mrs. Rosenblum bring us, Jimmy?" The teacher had touched on a particularly happy memory for the children. The student teacher had brought an unusual family of animals belonging to a neighbor next-door to school: a mother cat, her three kittens, and two baby chipmunks which the cat had adopted. A portable cage which Mr. Wall's sixth-grade class had constructed for just such a purpose was pressed into use. A day of rich learning

"animule" making, for the finished products were on display in the classroom.

DRAMATIZATION AND NUMBER STORIES

In connection with their basal reading experiences, the children decided to dramatize several of their animal stories, among them, "The Three Billy Goats Gruff." They simulated a bridge by placing two rows of chairs facing each other. They made masks representing the Troll and the three Billy Goats out of construction paper. With nine children participating in a choral speech choir to assist them, the four players executed the dramatic skit vividly and with keen appreciation.

The animal project presented many stimuli encouraging the children to create a variety of number stories incorporating the basic addition and subtraction facts. The flannel board was a favorite tool of the children for expressing these number stories. Mrs. Rucker had available countless animal figures in felt which are easily manipulated on the flannel board by any child. They delighted in expressing their new concepts in this way and the board was in almost constant use.

To check the accuracy of their animal number stories and to give further practice with basic concepts, the teacher encouraged pupils to manipulate pencils, crayons, or other handy objects.

THE WEEKLY NEWSPAPER

A continuing project of Mrs. Rucker's class of second graders, which began shortly after their return from the Christmas holidays, was the publication of a class newspaper. Jeff was the chief editor of the paper. His associate editors were Jean and Loui. All three children read at the fifth-grade level and performed at the fourth-grade level in spelling and language. Every child in the room contributed to the paper eventually, and writing ability was not a requisite for the acceptance of contributions. One child who had great difficulty in expressing himself in writing contributed regularly to a comic strip.

In addition to news stories and comic strips, the paper carried

stories or books in continuing installments. Bruce was one of such contributors. Two installments of a story of his were as follows:

Joe was a fish. He lived in the ocean. He was very curious. One day he saw a big black hole. He went in. It was a whale.

To be continued—

Joe was a lucky fish. He got out. He was not curious anymore until he saw a submarine. He swam into a torpedo hole.

To be continued—

Short prose items like the following were common:

Fairies are very pretty, and I like them very much. Is there such a thing as a fairy?

Hlene

Once there was a little baby crocodile. He was sad because his mother was sick. Finally, the baby crocodile found two father crocodiles. He told them all about his mother crocodile. The father crocodiles said they would help.

Paula

Pictures accompanied most of the contributions, including the poems and continued stories. The management of the newspaper was almost entirely in the hands of the pupils themselves. The teacher helped with the mechanics upon request, but scrupulously avoided imposing adult standards or attitudes upon the activity. The editors were quite frank in insisting upon correct work and sent contributors back to polish their written work many times. The peer pressure to improve communication skills seemed effective to a marked degree.

Both the contributors and the editors of the class newspaper were concerned with standards for group and individual behavior. Without any suggestion from the teacher the following types of articles appeared regularly in the paper:

When we are on the playground we should be careful not to push people. We should share things. When we play kickball and do not win, we should not cry about it. We should be good sports.

Jean

When you are working, don't make your table messy. Keep your table clean and neat.

This is a good way: put down your workbook first, then put your worksheets on the page you did yesterday; put your crayons on top of your worksheets; then put your art paper on the bottom of all your things; last of all put your reading book on the side of all the things.

Loui

SUMMARY

In this second-grade situation there is illustrated the opportunity which all elementary school teachers in self-contained classrooms have to promote a rich interactive relationship between the social studies and science projects and the reading and language arts program. The problem-solving activities of the former furnish the finest type of context for concept and functional skill development in the language arts. Creativity, above all, is a firm and lasting base for really effective skill development. The practice and drill that children need most in basic skills is the kind that helps children do the tasks they set for themselves under the kindly guidance of the teacher. In problem-solving and open situations of this type, the children also inevitably reach out to grasp concepts and skills in, for example, the use of the number system as quantitative phenomena may be encountered in their daily experiences. Both the systematic textbook programs in reading and arithmetic are immeasurably enriched and given meaning by the types of experiences described in this chapter.

The types of experiences and subject matter which the pupils in this group remembered and appreciated best are indicative of the types of curricular activities that promote permanent and functional learning. If teachers at this level will teach the three R's through the fascinating context of plants or animals, they are likely to succeed. If children can explore and participate in planning what is to be done, their learning is likely to be functional and, therefore, useful in the future.

As the student views the functional learnings of the children in Mrs. Rucker's class in language arts, science, or arithmetic, he

should understand that many time-honored and familiar techniques are used. Drill or practice is essential to the development of a system of skills. Sequence in the materials used for drill purposes must be planned to fit the developmental needs of pupils. Systematic teaching and direct help by the teacher often is mandatory. For instance, handwriting will not necessarily improve without guided writing activities. The teacher is as concerned with the development of one skill as she is with another when the teachable moment presents itself. If children are to copy an experience story which, as a group, they have dictated to the teacher and she has written on the board, they will be guided in careful handwriting as well as in other skills such as spelling. At this point, elementary punctuation may be reviewed casually.

Phonics, as an aid in word recognition, will receive systematic treatment for the specific uses the children may need to make of the technique, as when a strange word comes up in reading information on how plants grow. The teacher may find it advisable to use such an incident to extend general understanding of the use of a phonetic rule. It is desirable, also, to help children become conscious of the ways in which they can attack a strange word. The introduction of rules and extended practice materials for this purpose should be preceded by a sufficient number of experiences in which the child has felt the need and seen the demonstrated value of knowing how to deal with a new word without help. Becoming progressively conscious of context clues, pictorial or verbal, of word form, of word structure, and of phonetic clues is a necessary prelude to achieving independence in word recognition.

Mrs. Rucker creates a game situation whenever possible with drill activities. Children use flash cards for vocabulary drill helping one another in pairs. Children delight in building lists of words that rhyme, have the same beginning or ending, have the same consonant blend, or have the same vowel sounds. When these lists are evaluated in group discussion, the teacher is able to teach directly the different vowel sounds and their markings or the difference between a digraph or a consonant blend as the children correct their own lists. Mrs. Rucker finds that some children are eager

for such analysis while others seem to use language efficiently without analyzing the phonetic basis of many words they use. Therefore phonetic and other word analysis techniques, like the general rationale for skill development, should be paced with the individual child's receptivity.

Although Mrs. Rucker's pupils, in order to find the information which they seek for their projects, are avid readers of materials other than the basic reading textbooks, she organizes the more formal reading program based on the former for a majority of the pupils. She finds it necessary to use additional reading materials for her able readers, some of whom read at fifth-grade level. There can be little deprivation of the gifted child in such a teaching situation. Providing for the gifted pupil includes, for example, more than increasing the number learnings over those which his average age-mates can handle. His learning cannot be held to a particular level of subject matter or skill attainment. Intellectual giftedness must be provided for with more complex and vertically higher learning activities. The happy balance which Mrs. Rucker attains in providing for exploration and systematic practice, for individual rates of progress and group-centered experiences, and for aesthetic appreciation and understanding guarantees a favorable design for optimum development of each child in the class regardless of ability.

CHAPTER 10

Learning Experiences of 8-Year-Olds

Miss Frey was in her third year as teacher of her pupils.¹ The class had been organized originally by selecting children at random from all of the pupils who were to enter Grade 1. The nearly thirty children in the group had at least as wide a variety of background, ability, and interests as the other primary classes in the school. Miss Frey's situation was considered experimental by the school administration. All other classes were given a grade designation and none of the other teachers in the school taught a group of children more than one year.

Although the chapter is based on many informal visits to this class over a period of two years, the visit described in detail here was arranged so that the author could see the class in action for a full school day. Because this experience was so vivid for the author, he chooses to tell the story in the first person.

THE SETTING FOR LEARNING

I entered Miss Frey's classroom at 8:00 A.M. and found her at work at her desk in an inconspicuous place behind the piano. I

¹ In this chapter, the author shares with the reader his visits to an ungraded primary class in Winfield A. Holcomb School, Geneseo, N.Y. in 1930-1932. Miss Barbara Frey, the teacher of this group of children, has since become principal of Parkdale Elementary School, East Aurora, N.Y. The author served on the same staff with Miss Frey for two years and had many opportunities to observe her teaching informally. These experiences with Miss Frey and her pupils are among the richest contacts the author has had with elementary education.

made a remark about the unusual location of the desk, and she replied that she seldom sat at her desk when the children were in the room and preferred to have it out of the way. The classroom as a whole appeared to be organized and arranged for various types of work. Each area of floor space was adapted to furnish a setting for some activity, the evidences of which were incomplete work products, special equipment, and functional arrangement of furniture. It was evident that children had been here recently, and that they had been *engaged in some rather unusual experiences*.

There were no conventional desks for the children in the room. Instead, there were five broad tables with five or six chairs without arm rests grouped around each one. The tables were not arranged in any symmetrical pattern but placed in an informal manner around the room as the present tasks of the children seemed to dictate.

There was a construction area in the rear of the room with work-bench, an assortment of tools, and various types of raw materials. This construction area was bounded by the marionette theater and the piano. Many marionettes made by the children hung from a wire in the construction area. Miss Frey explained that the children had recently completed a project in which they were inspired to make marionettes from the characters they had read about in children's literature. The project culminated in a marionette show for the parents. The pupils had written their own play, built the theater, made the marionette dolls, and produced the play over a period of four weeks. Miss Frey added that this project had involved concepts and skills in most of the curriculum areas. Each child in the group had had a significant part to play in the production and had thus felt important and needed in the community of children. Also, each child had made important gains in reading, writing, and number work through participating in the many complex activities which led up to the day of production.

A storage area was represented by the row of cupboards under the windows. Here each child had an individual cupboard to store his books, papers, and other personal materials. On the opposite side of the room, there were ample shelves under the large tack

board which occupied most of the space on that wall. Here were displayed many types of work created by and useful to the children. On one section a committee had arranged several original poems and stories with appropriate illustrations. A news area included an invitation from a neighboring classroom, a thank-you note from a teacher who had received a red tulip from their garden, a letter granting permission to visit a seed company, and a newspaper produced by the children. A third area, obviously more permanent, included suggestions for committee work, a map of trips taken by the group, and carefully written fire drill instructions. There was no evidence of teacher-made work in the whole collection.

Below the display of pupil work were the book shelves. A variety of textbooks in the various curriculum areas such as reading, social studies, and science were arranged neatly on the shelves. I noticed an abundance of other books with a great variety of titles and subjects, including some original books by individuals in the group. The reading level appeared to vary from pre-primer to Grade 6. Miss Frey obviously knew this was the range of reading materials required by her group of 8-year-olds.

Since we had a few minutes to wait before the arrival of the children, I continued to look around the room. Miss Frey mentioned that the room was changed frequently to meet changing needs for space, access to materials, and social relationships. She remarked casually that the children had made the curtains for the windows as a project, deriving some concepts about measurement, multiplication, adding and subtracting with money, and the harmonizing of color combinations. She pointed to the aquarium in a water tight sand box by the window and said the children had set it up in another project. "It still has more fascination for them than anything else in the room," she said, as she leaned over to read the thermometer—the temperature of the water was crucial in the care of the type of tropical fish the children had placed in the aquarium. "Our guppies have had several 'blessed events' since we started out aquarium," she added, "and this led us quite naturally into a study of the ways animals reproduce their kind." Fastened to the cupboard just below the aquarium was a large chart

on which appeared the names of the fish and their ages. There was an open slot in the chart for the name of the child who had the responsibility for feeding the fish that week. Each child had his turn in performing this duty.

Turning to the front of the room, Miss Frey indicated the chalkboard and the large rug which lay on the floor in front of it, and said, "Here is where we do our planning as a group." She walked to the chalkboard and wrote near the top, "Our Plans for Today." She eyed the clock and said, "It's time for the children to arrive."

The children began coming in one by one. Each exchanged a pleasant but casual greeting with the teacher. Each went to his cupboard and put away his belongings. I was somewhat amazed at what the children brought in with them. One apparently had brought a small bag of flour, another a quarter of a pound of butter, another a packet of sugar, another some baking powder and a measure of salt. Others brought eggs, egg beaters, measuring cups, and cookie pans. Still other children brought in additional butter, flour, sugar, and a host of materials I could not immediately identify. All were stored away with a little gentle nudging from Miss Frey. Several girls put on aprons which Miss Frey said the children had made in class in preparation for today's activities.

The class went through the usual opening exercises, including the singing of "America" and the repeating of the Pledge of Allegiance to the Flag. Then the children went forward to the large rug and sat informally for a show-and-tell activity. The children took turns at standing to display an object brought to school for further study and exploration or to tell about something new that had happened to them overnight. Meanwhile, the leader for the day collected and recorded the money which the pupils brought for milk and cookies, usually consumed at the mid-morning "break," one child at a time reporting in alphabetical progression. Miss Frey whispered that she pointed out to the children that the alphabet helped them in many ways to organize and prevent confusion. She had told the parents that the alphabet as such was relatively unimportant in learning to read, but that it was learned in connection with situations like this, or, for example, when the

children were looking up words in the picture dictionary for the spelling of words in their original stories. A telephone directory had been compiled recently to emphasize the importance of this skill. And, some able children in this group used the regular dictionary usually introduced in Grade 4.

I was struck by the way the children expressed themselves freely without undue horseplay or shyness. Each seemed to have developed a good measure of security in the group. The activity, though casual and informal, obviously had been carefully developed by Miss Frey. The courtesy and interest of the audience for each speaker apparently was no accident. Attached to the chalk tray was a chart entitled, "When We Listen," which had been developed through teacher-pupil deliberation. Not only had the children participated in making the rules governing conduct during this show-and-tell activity but also these rules were a constant reminder to all since they were hanging in front of them at eye level as the group was sitting on the rug.

IMPROVING SKILLS THROUGH MAKING COOKIES

COOPERATIVE PLANNING

Miss Frey now came forward to the chalkboard where she had written, "Our Plans for Today." This was a signal for the leader to terminate the sharing activity and take his place in the encircling group. Miss Frey asked, "What have we been planning since last Thursday to do today?" This was an unnecessary question, one posed mainly for my benefit, for the children responded joyously: "Make cookies!" Miss Frey asked one of the children to tell me why it had taken them a week to get ready to bake cookies. The child said, "Well, we had to learn how to read a recipe; when we learned how to read recipes, we had to choose one to use to make our cookies." Another child gave this reason; "We had to learn about fractions before we could use a measuring cup." Another volunteered that they had had to learn about tablespoons, teaspoons, cup, pint, half-pint, and quart. As the information about recipes developed their learning, and they came to the point of

choosing one to use, the question of how many cookies to make in all came up for consideration. After some computation involving some new concept and skill development, the children decided there should be four cooking groups and that each group would make a portion equal to one-half the given measures on the recipe chosen. Apparently, the planning for cookie-making had been so interesting to the children, functional development of new skills and concepts have been possible before the actual cookie-baking was to take place.

Next, the planning involved organization of the children into working groups. Since there were to be four cooking groups, could twenty-seven children be divided equally so as to have the same number in each group? Miss Frey posed the question and brought an abacus to the front of the room to show the children how to determine the number in each group. The children manipulated the abacus and checked their calculations by dividing themselves into four groups repeating, "One goes here, one here, one there, and another there. . . ." They discovered that three groups would have seven members and one group would have six members.

Composition of each group was discussed and decided upon. Each cooking group would require a diversity of talent and competencies. There was a place for every child and a way for him to contribute to the group undertaking. All were considered important to the cookie operation.

WORKING PERIOD

The teacher-pupil planning completed, the children broke up into their four functional groups to organize for cookie-making. Miss Frey came over to tell me that this was an unusual day but that she really could not remember a typical day. Ordinarily, the class newspaper would be produced immediately after the show-and-tell activity, but on days like this it could be written in the afternoon. Each day the children were engaged in working out the details of some group activity, and subgroups often worked with the teacher in developing new skills and concepts. Sometimes she worked with the whole class, sometimes with smaller groups, and

sometimes with individuals. Nearly all the children learned something new with each new project, but each learned in his own way and in terms of his own potential. Miss Frey added that the need for new learnings constantly emerged from the group developmental process underway. The group process furnishes the context for much of the individual's developmental process of growth and learning. The atmosphere in her classroom was relatively free. Children were encouraged to participate but not forced to do so. Group projects provided activities to which one child might contribute while another might choose to share only as an observer. Miss Frey said she feels the teacher sometimes should put children on their own and let them work out their procedures as the children were doing now at each table. Always, however, Miss Frey said she tried to remain alert to the needs of individuals or committees regarding their planning and next steps. She moved here and there about the room helping, challenging, explaining, showing, encouraging, answering by finding an appropriate book, making a suggestion, or checking their materials. It seemed that she had provided successfully a secure atmosphere in the classroom free from unnecessary tensions and pressures. The routines were not as obvious in this classroom as in others, and yet, the children apparently had business-like work habits and were accustomed to a consistent rationale in which they helped determine what they could and could not do.

Soon the committees had worked out their internal organization and the details of their cookie-making operation. Now they were ready to report back to the class and to the teacher. Each group conducted a rehearsal of the cookie-making steps and all participated in a critique of the procedures. Without the real ingredients, the children indicated the measures to be used in the recipe and pointed to the line or level on the measuring instruments demonstrating that the facts of the problem had been learned. The mixing operations were reviewed. The child in each committee whose responsibility it was to read the direction to those who were doing the measuring or the mixing had a helper to check the accuracy of the reading of the recipe. The children discussed the mixing

sequence, the best way of rolling dough out on the board, plans for cutting or shaping the cookies, ways of greasing the pans, and plans for decorating the cookies. Suggestions for improving procedures were freely given by all members of the class. Suggestions were taken for the most part with good grace. Miss Frey maintained an atmosphere in which no child felt defeated by the give-and-take of evaluative discussion.

EXECUTING THE GROUP PLAN

The time arrived to reform their groups and mix the batter. The mixing, rolling, and cutting of cookies took place in the classroom. When the cookies were finally placed in the cookie pans, a few children were selected in each group to take the pans to the school kitchen where the dietician kindly assisted them in placing the cookies in the preheated oven. When the cookies were baked a short time later, the finished product was returned by the same children to the classroom just before lunch time. As the author watched the children go through the varied activities of planning and making cookies and then cleaning up afterward, he was impressed with the joy showing in their faces, as well as their intense concentration, curiosity, and anticipation. There was careful checking of notes, checking of each other. Fun and a businesslike attitude seemed mixed together.

Miss Frey had succeeded in providing favorable conditions for skill development and allowing for new contacts with subject matter. Specifically, new concepts or skills in science, nutrition, artistic design, fractions, and measures of volume were learned. Vocabularies were expanded. New reading skills and interests were developed. A varied group process worked effectively.

INDEPENDENT AND INDIVIDUALIZED STUDY

The children came in after lunch informally. Each one took out materials and began to work. Some went to the book shelf and selected either a basic textbook or a library book to read. Some read in pairs, helping each other. A few had chosen a large book with a hand-written story and photographs—the record of a recent

class trip—to read together again. Two children asked to go to the library. They returned a few minutes later with the books they needed. Miss Frey commented on the valuable service of the library to this type of program.

There was an occasional trip to the picture dictionary on a table or to the regular dictionary on the book shelf to look up a word. Some children recorded these words in a notebook. I asked Miss Frey about such word lists. She said that the pupils do a considerable amount of creative writing and like to use strange and unusual words. The pupils appeared to be enlarging their writing vocabularies rapidly and using language with ease.

Many children were reading, most of them alone or with a partner. Miss Frey remarked, "Much of this reading is a continuation of reading begun yesterday or even earlier." She indicated that not all but much of the individual reading was, in fact, based on self-selection. Nearly all of the recreational reading material was self-selected, and under some guidance all the pupils were encouraged to select their own materials for their work-type reading. As a child showed reluctance, confusion, or uncertainty, he was given any necessary help. Sometimes, the help came from a friend or a classmate interested in the same project. Children were urged to ask for necessary help, for this is a step in learning and a clue for future planning.

The afternoon program was almost entirely individualized learning. Each child went about his study independently, getting help from another child or the teacher as he felt the need. For the most part, the children were permitted to try what they wished. The teacher gave them definite help and encouragement when she felt they were ready and mature enough for the activity. Each child was helped to make wise choices but was not told what to choose. If a child chose something beyond his level of maturation or readiness, he would soon abandon the activity, ordinarily, and select another with no stigma of failure. Miss Frey avoided encouraging the children who usually attempted something beyond their level of maturity or ability, and she provides a climate in which the child can make another choice without any threat or loss of face. Soon,

Basic reading textbooks often were selected by the children, among others, for reading. Typically, they selected stories which appealed to them at the moment. Miss Frey said that children in her room constantly proved that reading materials with controlled vocabularies like those of the typical basic reading textbooks were unnecessary to successful reading. She stated that children frequently used words in their own writing and reading which would appear difficult to many adults. Often these longer and more complex words were easier to recognize by children than many shorter service words. Using such words gave the children confidence and a feeling that they were growing up in reading. In any case, most of the words in the approved vocabulary lists were used by the children as they went about their varied reading and writing activities.

PLANNING FOR TOMORROW

As the school day neared an end, the children assembled on the rug again with Miss Frey to plan for the next day. As the discussion progressed, I gathered that the class would launch a new project which would last for several days. That project was to build a picket fence around their garden plot just outside the classroom window. In anticipation of the planting season, they had planted seed two weeks previously and bedding plants were now growing in their classroom greenhouse. The time was now approaching when they must transfer their plants to the garden soil. Since other pupils in the school might not recognize the young plants as a garden and therefore inadvertently trample the planting area, they had decided to build a picket fence around their plot.

The author had the opportunity to watch the progress of this project over an extended period. The construction of the picket fence in the classroom created opportunities for much functional skill development and new horizons in the realm of ideas. When the picket fence was finished and put in place, the replanting began. Before the end of the school term, the garden had blossomed and borne fruit.

TEST RESULTS AND OTHER EVIDENCE

After the children left for home, Miss Frey talked about the performance of her children on standardized achievement tests in the basic curriculum areas such as reading, arithmetic, language, and spelling. These tests were given regularly to all children in the school. The results of these tests indicated that her children were equal or superior to children taught by more traditional methods in the same school. Further, she had a wider range of IQ's, viz., 53 to 133, in her group than was true of most of the other primary groups.

Tests proved to be only one of many of evaluating progress. Miss Frey looked to specific performances in classroom tasks. She looked for evidence of improvement in acquiring new words, in comprehension and fluency as a child, for example, reads, helps to dramatize a story, or follows directions for making something. Children also demonstrated their progress perhaps by locating information in a greater variety of sources, by reading a letter received by the class, or by success in construction activities indicating development of new skills and understandings. Another area of evaluation which seemed important to Miss Frey was the ability of pupils to assemble information and materials to communicate meanings, as in arranging a poster or an exhibit. Certainly, the worth-while learning in this class was not confined to the basic skills, however well these were learned. The growth and developments for which there are no exact measures probably were more significant.

SUMMARY

Grouping children and pacing their maturation has been a traditional dilemma of primary education. Children of approximately the same chronological age mature in many respects at different times. In the traditional lock step system of grade levels in the elementary school, teachers find themselves in a quandary each year when the time comes to decide who should be promoted and who should be retained. Invariably, there are a number of children

in each classroom group who are immature with respect to the standards of work and perhaps, even, of the social behavior standards for that grade. Teachers on the whole dislike to "fail" pupils because of the mental hygiene hazards which might ensue. Most would choose a sensible system in which a child could progress continuously in terms of his own rate and potential without any stigma of failure.

For example, many parents and some teachers feel that every child should learn to read during the first year in school. This cannot take place for some of the children either because of intellectual immaturity or because of other psychological and emotional factors. It would be far better for many children if formal reading instruction were delayed for one or even two years beyond the first experience with school. The cultural demands upon the teacher to force the child into the reading program in the first year of school could be resisted if the teacher could keep all pupils more than one year and start each one in reading, each at his own time. Miss Frey's primary group was an example of this type of primary continuity. It takes nearly a year to really know children (and they are continually changing), and Miss Frey was still learning how to help each of her children learn when she had to give them up to another teacher at the end of the third consecutive year.

Self-discipline is of paramount importance in a democracy. It is the emergent of a curriculum within which the child is allowed to exercise responsible freedom within kindly limits. Observations of Miss Frey's class demonstrated that children in such a democratic climate want to learn what they must. Miss Frey taught self-discipline subtly, persuasively, and charmingly. Her program was meticulously planned and objectively evaluated, but the calm and efficient manner in which she approached it made it appear entirely spontaneous. The children felt they were consulted on all matters, as indeed they were. Miss Frey was careful to impose few "musts" on her pupils, but every pupil appeared to accept the few that were necessary, such as those concerned with health, safety, and courteous group living.

One was struck by the mature way in which Miss Frey's pupils

went about their work as individuals and as group members. There was maximum pupil participation and activity. The pupils decided what they would do, and planned activities for the following day or the more distant future. They helped each other in many ways. The shy child was the responsibility of all: he was encouraged to talk about what he liked, to bring a favorite toy or pet to school, and to show and tell the group about it, and the other children tended to respond with interest and recognition. The aggressive child was helped find his place as a contributing group member.

The teacher guided this primary group mainly by knowing the children thoroughly and by helping them achieve their *realistic* purposes. The typical teacher is handicapped by the short time available for developing this rapport based upon mutual knowledge and understanding. The personal interest that Miss Frey communicated to each pupil as a person paid dividends when she and the child faced a learning task together. Since learning activities emerged out of the interests and purposes of the children, there was little difficulty in motivating them toward learning tasks.

In one way or another, every curriculum area familiar to the traditional teaching situation was touched upon in the experiencing of the children in Miss Frey's class. Contacts with traditional subject matter and skills probably were more meaningful and lasting since the children reached out to grasp concepts and data as a normal part of their many and varied problem-solving activities. In addition, many of the intangible, yet fruitful areas of the educational program (untested by standardized measures) were emphasized and achieved as evidenced in the responses of each individual child.

CHAPTER 11

Learning Experiences of 9-Year-Olds

A PROJECT ON INSECTS

Mrs. Janice Johnson's pupils in Grade 4¹ became avid observers of insects and collectors of insect specimen. This interest in the insect world gradually developed while Mrs. Johnson and her pupils were working on a project, "How Plants Serve Us." The pressure from the children to launch an all-out study of insects gradually mounted until Mrs. Johnson agreed and terminated the plant project.

She initiated the insect project on a Monday morning. Since it was not necessary to build interest or readiness for the new project, the teacher immediately informed the children about the preparation of insects for mounting. Usually, the children brought the insects they had been collecting to the classroom alive. One of the first techniques which Mrs. Johnson taught was the use of chloroform or other anesthetic to kill the insects inside a jar which prepared the insects for mounting without damage to their bodies. The children brought pickle and salad dressing jars from home for the purpose. They were guided by the teacher in following carefully the directions they found in a science textbook for the preparation of two types of "killing jars." While some children wrote the directions in their notebooks, others made a drawing of the jars on poster board for the benefit of the whole class. The chil-

¹ In Cragin Elementary School, Tucson, Ariz., 1958.

children did not have available in the classroom all of the materials necessary to construct the "killing jars." They planned how they would collect the necessary materials overnight for construction of the jars on the following day. Meanwhile, Mrs. Johnson suggested that the children collect pictures, information, objects, or anything they felt would add to their study of insects. She promised, too, that she would try to secure a film on insects so that they could see some of the homes and habits of insects.

On the next day, with two types of "killing jars" in operation, the mounting of the insects began in earnest. The children had brought small jewelry boxes from home, also. Mrs. Johnson supplied a roll of cotton which they used to line the boxes. She showed them how to mount insects like a wasp on a pin or those like a dragonfly directly on the cotton. Then she encouraged the children to give special care to the printing of the labels. After these were in place, she showed the children how to spread a clear plastic material over the top of the boxes. The mounting operation continued for several days as the collection grew. The pupils were proud of their mounted insects and were eager to show them to Mrs. Johnson and their parents. They took the insect specimens home each night to show parents and friends but each morning they would return them again to the classroom collection.

TEACHER-PUPIL PLANNING

The strong interest which the class had evidenced in mounting insects prompted Mrs. Johnson to collect a number of library books on insects and arrange an attractive display table. The children responded to this move with enthusiasm, absorbing the books and the information they contained. They learned about several insects not found in their immediate environment, and they discovered many interesting facts which they had not previously known about the familiar insects. These reading activities led to class discussion of helpful, harmful, and social insects. From this discussion emerged an interesting display on a corner table in the classroom. A colorful backdrop was provided by the bulletin board, on which

was carried out the motif of these three basic types of insects as discussed by the children.

Tentatively, the class had decided to study insects in terms of the three categories listed above. Thus, three committees were formed to investigate the increasing number of questions that the children were recording for further study. The committee on "social insects" decided almost immediately, however, that it would break up into two groups: one would study bees and the other ants. The other committees also divided into smaller groups, each desiring to study specific insects, like wasps, beetles, or butterflies. They engaged in a variety of learning activities displayed in drawings and other art forms. They also wrote reports, learned scientific names of insect parts, investigated their homes and eating habits, and studied their life cycles.

Each committee carried with it a list of questions which the class had compiled concerning its particular study topic. The committee was obligated to find answers and report back later to the class as a whole. The following traces a typical fourth-grade group project, in this case, the committee on ants.²

A COMMITTEE BEGINS ITS WORK

The committee on ants apparently attracted some of the abler pupils in the class. It consisted of Jon, Bill, Mary, Susan, Harry, and Shirley. The planning of the committee reflected maturity uncommon in Grade 4. They elected Jon their chairman. Taking all of the questions from the class inventory concerning ants and a great many new ones which committee members recorded as their reading led them into new areas of information and meaning, the children classified their questions under six categories for convenience. This is the list they compiled.

WHAT WE WANT TO FIND OUT

1. Ant Structure

- a. What are the main parts of the ant's body?

² The author is indebted to David Perkins, Marjory Hussey, Helen Harkins, and Herbert Larson for help in writing this section.

- b. Do ants have teeth?
- c. Do ants have tongues?
- d. How do ants keep clean?
- e. What other parts do ants have that we aren't aware of now?
- f. Do ants have eyes?
- g. Do ants smell?

2. Queen Ant

- a. How does the queen ant differ from other ants?
- b. Does she live with other ants?
- c. What is her job?
- d. Does she do all the work herself?
- e. How long does she live?
- f. How does she reproduce ants?
- g. How does she care for her young?

3. Worker and Nursemaid Ant

- a. What are their duties?
- b. What kind of ants are they?
- c. Do they ever lay eggs?
- d. How big are they compared to other ants of their family?
- e. Whom do they help or work with?
- f. How important are they?

4. Ants Which Store Honey

- a. Where are they found?
- b. Where do they get the honey?
- c. How do they store it?
- d. Where do they store the honey?
- e. How long does the honey that is stored last?

5. Ant Wars

- a. Do two different kinds of ants get along together?
- b. What causes ant wars?
- c. In battle do they always try killing their enemy?
- d. How do they fight?
- e. Which ants participate in the battles?

6. Different Kinds of Ants

- a. How many different kinds of ants are there?
- b. What are the names of the most common ants?
- c. Where do they live?
- d. How do they differ?

WHAT WE WANT TO DO

1. Locate an ant hill on a field trip.
2. Make an ant farm.
3. Make a mural of the ant farm.
4. Use microscope to see an ant and its body parts.
5. Use hand lens to see an ant farm more clearly.

The group then went over the list discussing unfamiliar words. The children added these words to their individual spelling lists, looked up the words in the dictionary, and then learned more about guide words. They also noticed how the word was divided into syllables, how it was pronounced, and whether it had one or several meanings. At the suggestion of the teacher the individual children created sentences with the new words in their lists. This was expanded into a more extensive creative writing experience later on.

When this was completed, the committee members discussed how and where they could find material on ants. The members suggested a number of different sources: the library, encyclopedias, science references in books and magazines, and their own textbook. They reviewed the method of finding material in the encyclopedias by using the index book and guide words of the volumes. They also remembered that in other books the table of contents would save them time in finding material.

When referring to their science textbooks they checked the table of contents to find which pages contained information on ants. Susan helped other members of the committee who had difficulty locating the material. They read this material silently, using the glossary and dictionary when they needed them. Then, they discussed the material. Not all of the children were able to finish reading the material, but by discussing it, they were able to grasp most of the information they had not read.

THE COMMITTEE SHARES WITH THE CLASS

At the beginning of class on Friday, Susan asked how many of the children had seen the TV program put on by the Arizona-

Sonora Desert Museum at 5:15 P.M. the previous day. Several children had. Mrs. Johnson then asked Susan to share with the class what she had seen. Susan told the students how ants hibernate during the winter. She said that ants go far down into the ground during the winter. She related that in the winter many people have dug into ant hills only to find no ants. She explained to the class that this was most probably due to the fact that the ants had retreated deep into the earth to avoid the cold.

Mrs. Johnson and the entire class had a pleasant surprise later the same day when Mary raised her hand and asked if she could read a poem she had written about ants. She told the class that Bill, another committee member, had invited her along to see the ants in action at his grandfather's farm. The poem read as follows:

ANTS

Mary and Bill found an ant hill,
While walking by a windmill.
Hundreds of ants were around it,
Carrying dirt bit by bit.
Many ants were racing by,
Working to bring home a dead fly.

The class applauded when she finished. Mrs. Johnson then asked Mary to copy her poem on the board. The class discussed its rhyme and rhythm. Dave asked Mrs. Johnson if it could be put to music. She declared it could and asked several children how they felt the first line should sound when put to song. This was repeated for each line while the teacher made some hasty notations as they proceeded. After a lively creative session, the class completed an original tune to go with the words of Mary's poem. Mrs. Johnson accompanied their singing on the autoharp several times to the satisfaction of all.

Then, after the music activity, the committees resumed working on their own projects. Each day the chairman of a committee would report to Mrs. Johnson with the progress of the committee outlined for her to see. Mrs. Johnson rotated from committee to commit-

tee and tried to give assistance where it was needed. She made a real effort to guide them as democratically as possible.

THE COMMITTEE DELVES DEEPER INTO ITS SUBJECT

A field trip to an ant hill was decided upon as one of the first activities of the committee. A large ant hill was reported to be on a vacant lot next to the school playground. The committee asked for permission to leave the class for a visit to this ant hill. Their discussion went as follows.

SUSAN: What do we want to see on our field trip?

JON: We want to see if the black ants are fighting the red ants.

MARY: I think we should watch to see the work the ants are doing around their ant hill.

SHIRLEY: We also might see what kind of opening ant hills have and if an ant hill has more than one opening.

MARY: We should look to see the type of dirt the hill is made of, and which ants are working on the outside of the hill.

JON: Maybe we could catch some ants and then we could bring them back to class with us.

MRS. JOHNSON: I think that is a most interesting idea, Jon. Perhaps you could dig up an ant colony as directed in your science book and bring it back for your proposed ant farm.

ALL: Yes!

MRS. JOHNSON (*directing her question to the whole class*): What will they have to have to bring the ants back?

After a short discussion, it was decided that a closed jar with small air holes in the lid would work. It was also decided that dampened sand should be placed in the jar first.

When the committee approached the ant hill on the vacant lot, Jon called attention to ants carrying objects larger than themselves. They all observed the ants carrying objects which weighed much more than the ant itself.

The group had a good time on the field trip. They saw three ant hills; two were of black ants and one of red ants. They collected leaves, wild flowers, and insects, also.

Jon listed on chart paper the things pertaining to ants and their

habits the committee had seen on the field trip. These are some of the things the group dictated to him.

1. Saw three ant hills, two of black ants and one of red ants.
2. Saw red ants attack black ants.
3. Saw worker ants.
4. Saw ants carrying food, which looked like wheat.
5. Saw ants playing and working.
6. Saw ants taking a bath.

Many other interesting points and observations were discussed during this period and Mrs. Johnson was very pleased with the favorable results of the field trip.

Although the committee had collected some ants for their large jar while on the field trip, they now planned to build a large ant farm for a whole colony of ants. They would need glass, masking tape, and sand. They wanted to be sure that fresh air and moisture were available to their ant colony and planned to provide for these factors in the construction of the ant farm.

Jon recalled from his reading that ants could not see light which had been filtered through a piece of red glass or red cellophane. The group decided to cover one-half of the window of their ant farm with some type of red filtering material so that they could observe the ants and see just what they did in the dark. The other half they planned to cover with clear glass and in this part they would be able to watch the ants as they went about their work in the daylight. Harry suggested that ants' eyes must be something like the sensitive paper his father used in his darkroom at home to print pictures. He said his father had a red light in his darkroom which didn't harm the print paper; but that the print paper was spoiled by any other light. His father had impressed that fact upon him one time when he had opened the darkroom door while he was busy printing pictures!

Jon suggested that they make the dimensions of the ant farm 10 in. by 20 in. For the sides, top, and bottom they would need four pieces of glass 10 in. by 10 in. and for the two ends 10 in. by 20 in. They would place a block of wood, 6 in. by 6 in. by 8 in.,

in the central areas so as to force the ants to tunnel near the outer glass. Jon and Harry went to a glass shop after school and checked on the thicknesses of glass available and how much they would cost.

The next morning the boys reported what they had found out. The shop had glass in thicknesses of $\frac{1}{8}$ in., $\frac{1}{16}$ in., $\frac{3}{8}$ in., and $\frac{1}{4}$ in. The man at the shop said that the $\frac{1}{8}$ in. and the $\frac{1}{16}$ in. would not be very strong and could not be handled much. He also said that the $\frac{3}{8}$ in. was more expensive. He suggested that they use the $\frac{1}{4}$ in. glass for their project. He told the boys that he had quite a large piece of the $\frac{1}{4}$ in. glass which he had salvaged when he had replaced a broken picture window, and that he would give the glass to them charging them only for the labor of cutting it.

At this time the children on the committee wanted to know how to compute the perimeters and areas of rectangles. Mrs. Johnson guided them in the acquisition of these meanings and the processes involved. She also helped them sharpen their multiplication skills for use in both the ant farm construction and other activities.

The committee agreed that in view of what they had found out, they would use the $\frac{1}{4}$ in. glass. The edges of the glass were rounded off at the glass shop so there was no danger of the children cutting themselves. Then the boys put the pieces into place and taped them together. Next, they put sand into the ant farm so that the ants would have something to work in to build their tunnels and homes. Jon had brought some sand from home which he had sifted through a coarse piece of screen. They filled the ant farm only half-full because they planned to use some soil from the ant hill also.

"The ant farm is ready now except for the ants," said Harry.

"What about the red glass so that the ants will think that they are in the dark?" asked Jon.

"Oh, that's right," replied Harry. "Mrs. Johnson doesn't have any red glass. Maybe we could find some red cellophane from a candy bar wrapper or from a tire patch over at the gas station."

"I'll see if my daddy has any more red glass like he used to make the red light in his darkroom," said Harry.

The following morning Harry brought one piece of red glass the right size and Jon brought two pieces of red cellophane. The committee agreed that the red glass would be better than the cellophane, but that it would be better to use the red cellophane on one side than to have to go to a photo shop and buy another piece of red glass.

The boys got out the masking tape and taped the glass in place on one side and the cellophane on the other. The ant farm was ready for the ant colony. They placed it on the committee's display table.

Jon volunteered to dig up an ant colony from a hill near his home during the week end. He would dig down deep with a spade. He used a large jar to carry the ants and the soil from their hill back to school. Even before he could get the ant colony to school its population had begun to make new tunnels through the soil in the jar.

On Monday when Jon brought the ant colony to school, the whole class watched with interest while he and Harry deposited the ants and ant hill soil in the ant farm they had built. The boys also put in several drops of water and some bread crumbs. They had learned from their science books that the ants ate bird seed and bread crumbs, and liked sugar or honey on their bread.

As the ants began to make new tunnels in the farm, the committee started a large mural about the ant farm.

SHARPENING SKILLS

The mural, they thought, should be at least eight times as big as the ant farm itself. The following discussion took place.

JON: That's a problem. We'll have to multiply everything by eight so that we will get the right measurements.

MRS. JOHNSON: You are quite right, Jon. Who can tell me what 8 times 20 is? Shirley?

SHIRLEY: I don't know. But I do know that 8 times 10 equals 80.

MRS. JOHNSON: Wouldn't 8 times 20 equal twice what 8 times 10 equals?

JON: Oh, two 8's are 16, and two 80's would be 160.

MRS. JOHNSON: That's correct! Jon, would you please write this problem on the blackboard so we could all see it? Now, again, what is 8 times 10?

ALL: Eighty.

MRS. JOHNSON: Yes, you are right. Now will you put that problem on the board so that we can all see it? Now for our mural, let's change these inches to feet. What do we do first?

HARRY: We must divide by twelve, since there are twelve inches in a foot.

MRS. JOHNSON: Will you come to the board and change eighty inches to feet for us, Harry?

HARRY: That's easy, we divide twelve into eighty. [Harry as he wrote on the blackboard, calculates that 12 divided into 80 in. equals six and two-thirds feet, the height of the mural. Jon calculates that 12 divided into 160 in. equals thirteen and one-third feet, the width of the mural.]

MRS. JOHNSON: That's correct, tomorrow you start drawing.

Some strips of paper were taped together for the proper width. Harry and Susan measured the back bulletin board to see if a mural of that size would fit there. After measuring the space with a yard-stick, the children found that they had planned too large a mural for the space. After further discussion, they decided to reduce the mural to six times the size of the ant farm. Calculations with 6's which were similar to those used with 8's were made.

Thus the activities progressed, with the children doing the major share of the work and planning. Mrs. Johnson served as a guide and adviser but tried to let the pupils themselves "learn-by-doing."

Mrs. Johnson reminded the committee that the man at the glass shop had been very kind to assist them with their ant farm project, even to the extent of supplying the glass free. "I think that you should write a thank-you letter to him, don't you," she asked. They agreed.

Mrs. Johnson asked what five things should be included when writing a letter. They listed first, the heading; second, the greeting; third, the body; fourth, the complimentary close; and fifth, the signature.

The children began to write their letters. They used rulers to aid them in making neat, straight margins.

After forty-five minutes, and several attempts on the part of many of the students, the letters were submitted to Mrs. Johnson. She read them and picked out the two letters which she thought were best. She then read these aloud to the class, designating them as No. 1 and No. 2. Following the reading of the letters, Mrs. Johnson handed out a small piece of paper to each of the children. She asked them to select which they preferred and write its numbers, *either one or two, on the papers. These pieces of paper, which* Mrs. Johnson explained were called ballots, *were collected and counted.*

After the votes had been tallied by Mrs. Johnson she reported that the votes cast had been:

Letter No. 1: 2 votes

Letter No. 2: 4 votes

Mrs. Johnson read letter No. 2 aloud again to the group and asked the pupils to correct any errors that they could hear. She then passed the letter around to see if anyone could find any mistakes in spelling, punctuation, or form. None of the boys and girls could find any mistakes so the suggestion was made to copy the letter over and to make an envelope for it. Letter No. 2 had been Susan's. She wrote neatly, too, and the group was proud to send her letter.

Susan addressed an envelope. Mrs. Johnson proofread the finished product and found no mistakes. She then showed the committee and other interested members of the class the correct way to fold a letter and place it in an envelope. Mrs. Johnson then sealed the envelope and sent it down to the principal's office to be stamped and sent out with the rest of the school mail.

THE COMMITTEES REPORT FINDINGS

On a Friday Mrs. Johnson asked the class if the committees on ants would be prepared to give their reports the following Wednesday. They agreed that they would be finished with their research and ready to report. She then suggested that perhaps they

could present their reports in the form of radio programs. These programs, it was planned, would consume most of the day. The class responded to this suggestion very enthusiastically.

Harry thought it a good idea to invite the other Grade 4 to come in and listen to his committee's program. He said that he had been telling some of his friends in the other Grade 4 about ants and many of them were very interested in the subject. The class all thought Harry's idea was very good and decided that it should be carried out.

The committee discussed the things they would need for their program to make it a success.

It was suggested by Mrs. Johnson they would need a rehearsal so they could be sure of presenting the program well. They decided to present the reports on Monday for their own class, then on Tuesday make changes and corrections, then on Wednesday give the program for the other class.

Bill asked, "Who is going to be on our radio program?"

"That's a good question," said Mrs. Johnson. "All members of the committee might have a part. Each one could prepare a report on what he has specialized in during the study."

On Monday the program of the committee on ants was rehearsed with each member giving his report. Carl volunteered to keep a record of the amount of time taken by each report. He copied these on the blackboard. At the end of the rehearsal the class added the minutes and seconds and found that the program lasted one hour and ten minutes.

"I think your program is too long," said Bobby. "I don't think it should be any longer than forty-five minutes."

"That means that we will have to cut out twenty-five minutes," added Harry.

"How can we cut the program fairly?" asked Mrs. Johnson.

"I think we should cut each report about the same amount," said Shirley. "We have six reports so we should cut four minutes and fifteen seconds from each report."

Carl then revised the schedule of time he had on the blackboard and with the help of the other members of the class, composed

the final time schedule. The script committee then made appropriate corrections in the script.

On Tuesday during the lunch hour the program was again rehearsed and Carl again checked the timing. The speakers had cut their reports just about right and Carl was very pleased with them.

Now the children felt that the program was well prepared and that they would be ready for their scheduled performance at ten o'clock on Wednesday morning. The invitation committee had already taken care of inviting the other Grade 4. It was planned that after the radio program, the mural, the ant farm, and the microscope (as well as the other insect collections) would be on display for the visitors to see and enjoy. The respective committees decided to remain near their specific displays so that all questions could be answered.

On Wednesday morning, Benny had the microphone all made and the final preparations concerning the program were completed. Mrs. Johnson guided the class in a discussion of proper manners and courtesy toward visitors.

Shortly before ten o'clock the invitation committee went to the other fourth grade room and ushered their visitors to the scene of the broadcast. The children settled in the room quite quickly considering the crowded conditions and inadequate seating facilities for sixty people.

Carl watched the clock carefully and at exactly ten o'clock he gave the cue to Frank, the class host, who explained the program and introduced the first speaker.

These are the reports which were given by the various speakers.

JON'S REPORT: PARTS OF AN ANT

Ants have three parts to their bodies—the head, thorax, and abdomen. They have six very long legs which grow from the thorax and which enable them to move very fast.

An ant has large jaws that move from side to side instead of up and down like ours. Ants do many things with their mouths. They carry food in them. They dig tunnels in the earth with them and carry out the soil and waste. They also use their jaws and teeth to fight with other ants as well as other enemies.

Ants have two feelers growing out of their heads. These feelers are moving all the time to help the ants find their way in the tunnels and compartments in the earth. Some people claim that ants smell with their feelers. They can smell their own nests. They even seem to be able to smell their own steps and follow them back.

Our group has made a picture showing the ant with its parts labeled. Mrs. Johnson will have it on the bulletin board for you all to see after the radio program.

BILL'S REPORT: ANT WARS

We are going to describe an ant war battle between some red and black ants. Part of this report is what we actually saw on our field trip and the rest is from our research.

First, we saw a single line of red ants leaving their hill. They were walking very fast, almost running. They headed straight for a hill. Others were busy trying to pile up dirt barricades around the entrances.

The battle began when a red ant attacked a black ant. The two ants locked jaws. The red ant was bigger than the black one and it beat the black ant back and forth on the ground. It looked like the battle was over when another black ant sneaked up behind the red ant and nipped off a hind leg with its powerful jaws.

Then both colors of ants joined in full-scale war. In this group of ants the red ones all seemed to be larger and stronger than the black ants. When the battle ended nearly all the black ants had been killed.

After the battle the red ants all ran quickly into the black ant hill. After a minute or two they all came out again carrying something in their jaws. It looked like each of them had a grain of wheat. Can anyone think of what it could have been? Each of them had the larva of a black ant.

The red fighter ants carried these larvae back to their own hill. When they got them there they gave them to the nursemaids. The nursemaids care for the larvae until they grow up and become their slaves. They take as good care of the black ants as the young red ants.

MARY'S REPORT: MANY KINDS OF ANTS

There are thousands of different kinds of ants. Our committee will tell you about a few of the more common ones.

Have you ever heard of farmer ants? Farmer ants live in South

America and in the southern part of our own country. These ants raise gardens right in their ant hills. They plant ant rice in their gardens right in their ant hills. This rice sprouts in the warm damp soil of the hills. As the little seeds begin to grow, the stored starch turns to sugar. Ants like sweet things so they eat the tiny ant rice sprouts.

These farmer ants also store tiny grain and grass seeds in their hills also. Most of the ants can not eat the seeds as they are because their mouths are not big enough. For this reason some of the larger worker ants act as millers. Their jaws are extra large and powerful. They put the seeds in their mouths and grind them to fine flour. There are still other farmer ants which grow mushrooms on damp leaves which they have carried into their hills.

All ants do not live in tunnels under the ground. Some live in wood. These we call carpenter ants. They use their strong jaws and sharp teeth to bore holes into trees, posts, and lumber in buildings. These holes weaken the lumber and kill the trees. These ants cause a great deal of expense every year and for this reason people dislike them very much.

There are many kinds of ants which we do not find in the United States. There are giant ants almost an inch long which are found in Bolivia. In Australia we find ants which we call bulldog ants. They have very large jaws and look very much like a tiny bulldog. These bulldog ants can poison you if you are bitten by them.

Another fascinating kind of ant is the tailor ant which is found in India. This ant lives in houses made of leaves. The worker ant puts the leaves in place and then she pulls a larva over the leaves. The larva spins a sticky silk thread over these leaves and when the thread dries the leaves are stuck together.

Some kinds of ants are used for food. They are chopped to pieces and made into a paste which is eaten by people. I don't believe I would like to eat ant paste, would you? The next time you buy goldfish food notice the label to see if it is made of ants. The pupae of some ants are dried and used for goldfish food.

SUSAN'S REPORT: QUEEN ANT

The young ants find new homes in the spring or summer. You can see the gauzy, glistening wings on all the drones and queen ants. The drone's wings are smaller than the queen ant's wings. On a warm day the drones and queens fly out of their ant hills, and never return.

From other ant hills the young queen ants usually find mates among the flying drones. Each queen ant tries to locate a suitable spot to start her home. We use the word "tries" because only a few queens live to make a new ant hill. The drones live only a short time if they are not killed by enemies. Our world would be soon overrun by ants if even only ten queen ants lived out of every one hundred. We can then say that the enemies are our helpers, because they can reduce the number of ants in the world.

The queen's honeymoon is over when she settles down in a tiny hole in the ground or in a log. The queen has no need for her wings again, so she tears them off. Some even will eat them.

Of all the ants in the colony the queen ant is the most important. Laying eggs is her duty. As soon as the honeymoon is over she begins to work. At first she lays only a few eggs and watches over them carefully. The eggs hatch in about two weeks. From the eggs creep out tiny white larvae.

The queen does nothing but lay eggs now that she has the worker ants to work for her. Every minute the queen lays about two eggs. Millions of eggs will be laid during her life span. The queen can live ten years or more. As soon as the eggs are laid, the worker ants carry them off to a room where only eggs are stored. Each egg is about the size of a pin point.

The queen has her own room. Her room is the farthest one from the entrance of the ant hill. The queen has several smaller worker ants as her maids. Food is brought to her by them. They keep her clean by licking their long tongues on her. They keep her room clean by carrying out loose soil that may spoil her room.

The ant hill is ruled by the queen. She has all the other ants working for her and also protecting her.

HARRY'S REPORT: WORKER AND NURSEMAID ANT

The ant hill is composed mostly of worker ants. It is kept clean by them and protected. Gathering food for the queen and her young is their most important job. The female ants are always the workers. The workers are never able to lay eggs that can be hatched.

The huge workers act as policemen. The ant hill is guarded by them. The smallest workers act as nursemaids. Their duty is to care for the larvae. Gardens are sometimes raised by the nursemaids. The food is gathered and the house kept clean by the medium-sized

workers. The medium-sized workers are aided by the policemen. Tunnels into the ground are made by them. On top of the earth you can see the dirt they have piled from the tunnels. Many apartments and store rooms are located in the ant hill. The ants make sloping tunnels to get from one room to another and to various floors.

The workers are clean and neat housekeepers. The workers place the waste material in a pile or move it out of the home. They never leave the waste material near the queen or larvae.

As we have mentioned earlier in our report, the duty of the nursemaid to care for the eggs and larvae as soon as the queen lays the eggs and the nursemaid takes them into a warm room. In this room nothing but eggs are kept. The larva is fed here with food from the nursemaid's mouth. A warm temperature is needed for the larvae. Several times a day the nursemaid will move the larvae from place to place. When it is cool at night she moves them to a warmer place and during the day when it is hot she moves them deeper in the ground where it is cooler.

The nursemaid carries the larva the same way as a mother dog carries her pup. It is held by its outer skin, and dangles like a piece of paper curled up. The nursemaid is careful in carrying the larva, so she won't injure it with her sharp teeth. The larva is cleaned and bathed by the nursemaid.

When the larvae have finished spinning cocoons, they are called pupae. The pupae are moved again by their outside silk threads into another room. Once more the nursemaid is careful not to do any harm. She moves the pupae to adjust to the temperature changes.

The legs of the new ant are crooked and cramped when it comes out of the cocoon. The nursemaid carries it around at first because it is weak. The ant is carried by its tiny waist.

SHIRLEY'S REPORT: HONEY STORED BY ANTS

Do you know what we mean when we say "ants keep cows?" This means that ants like food that has a sweet flavor. They have located certain plant lice called aphids which suck the sweet sap from flowers and plants. The sap passes through the aphids' body after it has been sucked from the flowers and plants. It is called honeydew. The honeydew is taken from the aphids by the ants. The ant's cows, then, are the aphids. The ants can make aphids give up their honeydew the same way a farmer makes a cow give up her milk.

Once the aphid has put its beak into the plant stem it remains in that same position for the remainder of its life. The sap is sucked from the plant through the aphid's beak.

The ant strokes its antennae on the aphid's back when it desires to have some honeydew. From the tiny tubes on the aphid's back oozes out honeydew. The ant drinks as much honeydew as she likes. She moves to another aphid when she finds that the aphid has been milked dry. Many aphids are kept near these ants. Many times you can notice the ants caring for the baby aphids. In the autumn the ants gather aphid eggs and store them until spring. The nursemaids take care of the baby aphids when they are hatched in the same manner as their own larvae.

Mrs. Johnson's class enjoyed playing host to their visitors and the visitors enjoyed watching and listening. They also enjoyed looking at the exhibits after the program. Looking at an ant through the microscope seemed the most fascinating to the visitors but the mural and ant farm also drew much attention.

Those who took part in the actual radio program learned to develop skill in oral reading so that the material would be interesting as well as meaningful to the listeners. This experience was also a lesson in coöperation and working together inasmuch as everyone needed to help so that the program would be a success. Being host to guests, inviting guests, and entertaining guests in a courteous manner provided training in social conventions.

This project took time, effort, and energy on the part of the pupils and their teacher. The educational values derived proved to be so numerous that Mrs. Johnson as well as her class felt that the time had been well spent. The interest and enjoyment on the part of the students capped the entire project in a very fitting manner. Although these experiences took place in only weeks, the values gained and skills learned, will benefit the participants for years to come.

The following is one of several lists compiled by the pupils upon completion of the insect project, this submitted by the ant committee.

OUTLINE OF WHAT HAS BEEN LEARNED (PUPIL'S LIST)

A. Arithmetic

1. Using Roman numbers
2. Using ruler for mural, margins and ant farm
3. Working problems with distance and time
4. Using fractions
5. Doing area and perimeter problems
6. Working with feet and inches
7. Doing problems of class averages
8. Working problems of addition, subtraction, multiplication, and division

B. Science

1. Learning about different kinds of insects
2. Studying carefully the ant's home, duties, and habits in the ant farm
3. Using the microscope to see the body of the insect clearer
4. Learning that different kinds of ants may not get along together
5. Learning about survival of the fittest
6. Learning how insects are born

C. Art

1. Making a mural
2. Doing a chart

D. Music

1. Composing a song
2. Becoming better acquainted with note values
3. Using arithmetic to get the correct number of notes in each measure

E. Reading

1. Using the dictionary
 - a) Pronunciation
 - b) Guide words
 - c) Syllabication
 - d) Number of meanings each word has
2. Using the table of contents
3. Using the index of reference books and encyclopedias
4. Reading library books, encyclopedias, and texts
5. Learning to skim for information

6. Using the glossary

F. Other language arts

1. Making the outline form
2. Learning the parts of a letter
3. Composing original letters
4. Learning how to address an envelope
5. Writing original ideas in sentences
6. Reviewing parts of a speech
7. Writing reports using correct paragraph form
8. Using capitals and correct punctuation in writing sentences, reports and letters
9. Learning to express oneself better orally
10. Talking in informal discussion
11. Strengthening listening activities
12. Practicing cursive and manuscript writing
13. Adding new spelling words to individual lists

G. Miscellaneous

1. Learning to stay on the subject during discussion
2. Learning how to work together
3. Learning democratic procedure in voting and working together
4. Using map reading
5. Using applied safety rules on field trip and committees

SUMMARY

The preparation and presentation of the radio program and exhibits as a culminating activity of the project provided the children with a wide variety of concepts and skills. They were guided in concepts of time by working with addition, subtraction, multiplication, and division of hours, minutes, and seconds. The writing of the reports gave them experience in writing smooth sentences as well as in maintaining smooth-flowing thought throughout. In cutting their reports in length, they learned to omit parts without changing the basic thought.

CHAPTER 12

Learning Experiences of 10-Year-Olds

The learning experiences described in this chapter took place in two different fifth-grade classrooms, both outstanding in the methods by which the teachers provided for rich and varied learning activities.¹ The creative activities in these classes were part of the regular curriculum, giving expression and practice in new skills and concepts constantly. These two groups of children did their work in a wholesome emotional climate, had a good feeling about school and about their teachers, and gained more than is normal including those aspects of the curriculum measurable by standardized achievement tests. Both teachers have a reputation for helping emotionally disturbed children after others have failed. There are few mental health hazards for children in these classrooms; indeed, many maladjusted children have found themselves while living and learning in the teaching situations these teachers provide.

Although both classes carried on similar studies of Mexico and South America during the same school year, the spotlight in the second class situation was upon specific creative activities such as original story and book writing, making marionettes and producing original marionette dramas, and sculpturing in a variety of materials. Probably no one fifth-grade teacher would choose in one school

¹ The first class situation described is that of Mrs. Myrna Hillyard, Pueblo Gardens School, Tucson, Ariz., 1958. The focus here is upon her class project, "Touring Latin America." The second situation treated in the section, "Accent on Fine Arts," is that of Miss Winifred Rinker, Blenman School, Tucson, Ariz.

year to include all of the activities described in this chapter, nor is this a complete list of such activities in the classrooms of these two teachers. It is hoped, however, that teachers and prospective teachers will gain inspiration and "how-to-do-it" techniques from the experiences described.

TOURING LATIN AMERICA

The principal of Pueblo Gardens School visited Mrs. Hillyard's fifth-grade classroom one afternoon in March in response to an invitation from the pupils to hear their program on space travel and to see their exhibits on man in the space age. After the program she engaged some of the children in informal conversation about their work. After a few minutes a pupil, Alfred, admitted her earrings. She explained that she had purchased them the Saturday before in Nogales, Mexico, a town across the border about sixty-five miles from their city of Tucson. Alfred remarked that they were just like his mother's silver earrings, ones she had bought in Taxco, Mexico, during their last Christmas vacation. Several in the group wanted to examine the earrings and the principal took them off and let the children examine them closely. She asked Alfred if he thought they had been made in Taxco. He replied that he had thought so. He had seen Mexicans in Taxco making earrings and other objects out of silver ore by hand and with only a few tools. His mother had bought similar earrings at a shop where this craft was being practiced right before their eyes.

A NEW PROJECT EMERGES²

Sensing that the next project of the class probably was being initiated by Alfred's attention to Mexican jewelry, Mrs. Hillyard suggested that he prepare a full account of his vacation adventures in Mexico for the following morning. He could bring souvenirs of the trip to class if he desired, too. Alfred was glad to have this opportunity to tell the class of his adventures in Mexico and to show the class some of the picture post cards and other objects his

² The author is indebted to Patricia Swan, Emily Cox, Sam Polito, and Marion Triem for help in writing this section.

family had brought back. On the following morning, he began his talk by showing the class some silver ore he had brought back from Taxco. It was the kind of ore the Mexican silver craftsmen used to make jewelry just like the earrings of his mother and the principal. He passed the ore around the classroom for all to handle. Steve wondered how something so pretty as jewelry could be made out of an old rock; and Linda told the class that she also had bought something made of silver in Mexico—a bracelet, but that it had turned black after a while and it was not attractive anymore. Mrs. Hillyard explained that silver turned black from the air but that it often could be polished bright again.

Alfred continued his story. He told them that Taxco was such a quaint and beautiful city. It had large cathedrals and many small adobe houses and dirt streets. He told them that Taxco was quite different from Tucson. Jim said, "We've got cathedrals here in Tucson, and there are lots of adobe houses and dirt streets here, too." Alfred said that he could not explain the differences very well.

At this point Mrs. Hillyard told the class that she knew of a very good film that would show all of them what Taxco was like. She explained that there were no modern buildings in Taxco because the government would not allow them to be built. The Mexicans wish to preserve the combination of Indian and Spanish culture that exists there. Steve commented that he thought this would stop progress altogether, and he could not see living in the past all his life. Judy said that she wouldn't mind living in Taxco because she had heard that the Mexicans lived a more simple life that allowed them time to do the things they wanted to do. She would like to have time to make pretty jewelry.

Mrs. Hillyard made arrangements with the visual aids bureau to have a film called *Taxco—City of Enchantment* shown to the children on Monday morning.

Early Monday morning as the class began their daily planning session Mrs. Hillyard told them that she had been able to get a film about Taxco, and asked them if they would like to see it. The children were quite ready. Mrs. Hillyard asked them if there were

not some things that they would like to know about the city before they viewed the film. Linda wanted to know where Taxco was. Mrs. Hillyard turned to the map of Mexico and asked Alfred if he could find the city he had visited. Alfred, with the help of the teacher and the other children, found Mexico City, where his family had stayed in a hotel. He knew that Taxco was not far from there. Finally, he located it southwest of Mexico City. They discovered, also, from the colors of the physical region around the city that it was in a mountainous or a plateau region. Mrs. Hillyard then sent Freddie, the class messenger of the week, to tell the projectionist they were ready to see the film.

While the projectionist was setting up the film equipment, Mrs. Hillyard pointed out to the class that Alfred and his family had traveled from Tucson to Taxco by automobile; but in the film, a family traveled from Phoenix to Mexico City by airplane, and then by auto to Taxco. She told them that they would see the people living much as their ancestors had before them.

After the film was shown, a lively discussion followed. The class could not help commenting on the unusual things that they saw—women doing the family wash in a reservoir, steep streets paved with slick round stones, beautiful scenes of humming birds and lovely flowers, and groups of men gathered underneath ancient Indian laurel trees with their products to sell. Alfred said that seeing the film made him feel as if he had taken his vacation all over again. Cathy wanted to know what the other cities in Mexico and South America were like. Judy wondered if coffee was grown in Mexico like it was in Brazil. Jim was disappointed; he would have preferred a war picture showing how the Spaniards had conquered the Aztecs. Freddie wondered where they got all the silver to make their jewelry.

From such comments, Mrs. Hillyard sensed the opportunity to start a major project on Latin America. She walked to the chalkboard and wrote, "What We Want to Find Out," on one side and on the other she wrote, "What We Want to Do." Then she said, "Since Judy is interested in coffee and since the Spanish conquest took place throughout Mexico, Central America, and South Amer-

ica, I suggest we study all of Latin America, taking plenty of time, and dividing into committees to study according to our interests." She listed all of the questions and suggested activities as they came from the children in their discussion. After about an hour, these seemed to indicate major topics as follows:

1. How did the Maya, Inca, and Aztec Indians live?
2. How did the Spaniards conquer the New World?
3. What are the main places of interest in Latin America?
4. Early History of the Spanish Colonies.
5. How do people make a living in various parts of Latin America?
6. What are the natural resources of Latin America and where are they located?

The next step involved the forming of committees to study each of these areas. The children were encouraged to choose the topic which most interested them. With few exceptions, each followed an interest expressed in the previous discussion. Those children choosing to work on the committee on "How did the Maya, Inca, and Aztec Indians live?" elected Kay their leader. Jim became the chairman of the Spanish conquest committee. Alfred headed the group on early history. Cathy provided the leadership on how people make a living. The progress-minded Steve was the leader of the natural resources committee; he wanted to see how the people of Latin America could exploit their resources so as to build a modern industrial economy. Linda was glad to look into the locations of various places of interest and chaired that committee. All groups began the big search for answers to their questions and planned various activities and projects which would express each group's newly formed projects.

RESEARCH, REPORTING, AND INTERPRETATION

Mrs. Hillyard helped the class find materials and arranged a bulletin board of interesting pictures concerning "El Toro and the Toreadors." To sharpen work habits and facilitate committee discussion she led the class in developing two charts which became permanent equipment in the classroom: one was entitled "Rules

for Discussion," the other "Sources of Information." Mrs. Hillyard also arranged a reading table for the many new books and pamphlets which she and the children brought in for the project.

Kay's group had discovered a picture and description of the gem of Indian design—the Aztec calendar, during their search, and wanted to recreate one of their own. Mrs. Hillyard, seeing the implications of such an undertaking for teaching arithmetic skills, suggested that they make the reproduction of the calendar a class project. She asked Kay to show the class the picture and to tell them what her committee had discovered. Kay explained that the Aztec calendar showed three hundred and sixty-five days—the same as ours, but there were eighteen months in their year instead of twelve: there were twenty days in each of their months with five days dangling at the end of the year. The Aztecs did not have a Leap Year as we do. She added that this calendar was more accurate than the Babylonian calendar which the class had studied about the previous year in social science. She displayed the colored photo of the calendar which she had found at home in the *American People's Encyclopedia*, and told them that she also had seen the calendar design on a big pottery plate at her aunt's house.

She pointed out that the real calendar was much larger than the picture of it. Another pupil asked, "How much larger?" Kay read from the caption below the picture that the calendar measured twelve feet in diameter. Freddy wanted to know what diameter meant. "Does anyone in the class know?" asked Mrs. Hillyard. No one did. She asked them to look at the clock and tell what the shape of its face formed. Judy said that it was round. "Yes," said Mrs. Hillyard, "It is round, but what does it form? What do we form on the playground when we play dodgeball?" "A circle," answered Jim. Mrs. Hillyard continued to explain that the form made by the children, the clock's face, and the calendar were all circles. She went on, "If the clock's hands were in a straight line, they would divide the clock's face (or circle) in half. The hands form the diameter of the clock face when they are in a straight line.

Jim volunteered to reason out that the calendar was twelve feet

across the center." Judy wanted to know about how long twelve feet would be, and with Mrs. Hillyard's prompting, Jim and his appointed helper, Steve, with a yardstick measured twelve feet along the classroom floor. The class was shocked to find that the calendar was about half the width of their room. Kay stated they could make a calendar like it—only smaller than the original.

Mrs. Hillyard told the committee about the fine exhibit at the Arizona State Museum on the University of Arizona campus. She had seen there an excellent reproduction of the Aztec calendar with an explanation of its use. The committee decided that they would like to see the exhibit. Kay's mother took the committee to the museum after school one day.

Before progressing very far in this committee's project it was necessary for them to learn about concentric circles, learn how to divide a circle into its various sized angles; and Mrs. Hillyard took the opportunity to introduce to some of the able pupils a few elementary geometric concepts. This involved the use of geometric tools such as the ruler, the compass, and the protractor.

Meanwhile, Linda's group, in its study of important cities and other places of interest, was learning a great deal about the geography of South America. They saw the need for a map construction in order to locate the cities. The other committees had also expressed a desire to show some of their findings on a map. But one pupil said he could not see throwing everything on one map. He suggested that they make a large map and have some individual ones too. A few judges could decide what things should be put on the big map. Linda agreed with him. She thought the finished map would be more artistic that way.

Magazine illustrations of Spanish and Indian architecture, famous men, etc., were placed on the bulletin board in the map area. Later, a large commercial map of Mexico was placed on this board.

Alfred's group had succeeded in their report to the class on early history in bringing out the following concepts of early Indian and Spanish architecture.

1. That the Indian buildings had not had effective roofs until the Spaniards introduced the dome.
2. That many of the old Spanish cathedrals in Mexico were originally sites of Indian temples.
3. That the baroque architecture that exists in Mexico is a peculiar combination of the fusion of Indian and Spanish culture. Both were good builders, but the Indians had a feeling for carving and decoration.
4. That there are cathedrals in Tucson that illustrate the Mexican or Spanish baroque architecture, namely, the exterior of St. Augustine Cathedral and the San Xavier Mission.
5. That there are many examples of Indian-type buildings on the Papago Indian reservation as well as those that are scattered throughout the older parts of Tucson.

The class decided, through the teacher's suggestion, that they would like to see the various buildings, and Mrs. Hillyard told them that she would make arrangements for a field trip to see St. Augustine and San Xavier Mission. She suggested that they might like to see the Pima County courthouse to observe the colorful Spanish tiles that form the patio design.

A few days later, the school bus was employed to take them on the four visits planned. Before leaving the school, the children reviewed the safety rules and manners with which they were well acquainted from previous trips, and chose their seat partners. Mrs. Hillyard told them that they would be visiting a house of worship and that their trip to San Xavier Mission would be guided by one of the priests of the Franciscan Order who would point out the features of the building and the area around it. Alfred's group had envisioned that the entire trip should be guided, so they prepared a narrative to read or tell to the class during their first stop—a view of the outward features of St. Augustine Cathedral. When the bus stopped in front of the cathedral, Alfred, very proud of his newly acquired position, began.

The outside of the cathedral is a good example of Mexican architecture. It is built similarly to other cathedrals found in Mexico. Notice the dome. This structure was introduced by the Spaniards. The towers,

domes, and form of this building are called Spanish baroque because these features were Spanish in origin. This building is almost identical to the cathedral which we saw in our movie of Taxco. The Indians of Mexico were very good at carving and decorating, and the intricate designs on this building are mostly due to their influence. The combination of Spanish and Indian gives this building the name Mexican baroque.

The class was given a few moments to observe the features of the cathedral which were pointed out by Alfred. Then they continued on to San Xavier Mission.

While at the Mission, they were told of the Mission's history and how it served the surrounding Indian community. They were taken through the interior of the building and were shown all the beautiful decorations—the vivid colors of which had been preserved over a period of four hundred years. This illustrated, dramatically, the Indian genius for color and design. As the children looked about the church admiring the beautiful workmanship of the designs, a few Indians came into the church to worship. The class left the room quietly. Alfred thanked the priest for his help in answering their questions.

After the children had settled on the bus for the journey to the Pima County courthouse, Mrs. Hillyard passed out mimeographed sheets to each child. On them were printed several Mexican songs. She sang the first stanza of "Fiesta Days." She asked the class to join with her in singing it a second time. After they had learned the melody it was easy to sing it in its entirety. They were familiar with "Celito Lindo" and "Gay Caballero," and Mrs. Hillyard said they would spend more time with the others when they got back to the school. They arrived at the courthouse before they realized it.

In the plaza of the courthouse, the children saw examples of the lovely tiles used in the mosaics and decorations. Judy, after careful study, suggested that the tiles could be easily made and would be lots of fun. The teacher told them that perhaps she could see about getting materials for them if some of them would like to undertake the project.

They went on to the Arizona State Museum where they saw the informative exhibit on the Central American Indian culture.

When the children returned to the classroom, Mrs. Hillyard suggested that they write a thank-you letter to the priest who had directed them through the Mission. After the class had discussed and reviewed proper letter form they wrote their letters. The class decided to send the best one, but when all of them had been read, a decision could not be reached. The class voted to send all of them in one large envelope since they had all put forth such a good effort and they were varied and interesting.

In the interim, Steve and his natural resources group had learned a lot about the mining of silver. They found out that silver was mined very much like any other underground ore. They discovered that Mexico ranked first in the countries of the world that produced silver. They thought it would be a good idea to construct graphs showing how much silver was mined yearly in the various countries. This involved many arithmetic skills as the graphs were executed. Some were bar graphs, others picture graphs.

They also prepared an excellent demonstration involving the electrolysis of silver. The group brought two porcelain pans, aluminum foil, a container of salt, and a container of baking soda. Linda brought her silver bracelet which had tarnished. The demonstration started. Steve placed salt and soda in both porcelain pans, and a piece of aluminum foil was placed in the bottom of each pan. In the first pan he placed the bracelet and added cold water. The children noticed that nothing happened to the bracelet. It remained black. Then he took the bracelet from the first pan and placed it in the second pan. He asked Mrs. Hillyard to pour in the hot water which had been heating on the electric plate in the classroom. The children noted that the solution bubbled and as the bracelet became heated it began to get bright and shiny. Steve explained to the class that the salt and soda in the water set up an electrolytic action with heat. The silver of the bracelet and the aluminum of the foil acted as electric plates. A minute electric current was set up; hydrogen was released. The black on the

bracelet was silver sulfide. The silver sulfide was reduced to silver and sulfur, and the sulfur was transferred to the aluminum. This was clearly visible to the children, because they could see the blackened aluminum foil.

Mrs. Hillyard removed the bracelet and the foil, and Steve passed the exhibit around the class. He explained that the bracelet would tarnish again because the air contains sulfurous hydrogen. It would react with the silver and silver sulfide would form again giving the bracelet a black coating. He added that sulfurous hydrogen has a pungent odor like that of rotten eggs, and that this gas is always present in small, unnoticed amounts in the air. Steve also explained that silver sulfide is found in one of the silver ores. It is called argentite. A large scale electrolytic process similar to the one that he had just shown the class was one of the methods used to refine the metal.

Throughout the research, and reporting activities, Mrs. Hillyard had made available free reading materials from the local library, and it was gratifying to her that the scheduled story-report periods, which composed a portion of the regular developmental reading program, became increasingly filled with reports on Mexican stories. Mrs. Hillyard, herself, read to the class for group discussion stories such as *The Secret Staircase* by Millicent Lee and Frances Dehls's *Talking Bird*. Poems such as "Popocatepetl," "Mexican Market Woman," and "Siesta" were another source of group enjoyment. A bulletin board had been decorated with various souvenirs from Mexico, too.

The dictionaries available to the class had been used regularly and the skills for using them were in constant practice.

The search of some of the committees had reached outside of school, home and library facilities. Linda's group had written letters to travel agencies for information on Latin American cities, and had received, in return, colorful travel pamphlets with a wealth of information, some of which they cut up and used to decorate part of the class map. Other committee members made scrapbooks of the various cities they studied. This group also received some very valuable information on the monetary exchange

between the United States and Mexico. Through experiences of solving problems involving the exchange of dollars for pesos and centavos the group gained an insight into the Mexican monetary system compared with ours. It was an ideal opportunity for Mrs. Hillyard to emphasize the fractions and decimals to which the children had been exposed.

As an added experience, Mrs. Hillyard read a short play from Rose Heilbron's book *Let's Go to Mexico*. Afterwards a few of the children reread the play, each taking a different character role. The result of this activity led to a class play.

CREATIVE ACTIVITIES

Development of the tile craft work, the idea of which originated during the field trip, was gathering momentum. Mrs. Hillyard had read in her arts and crafts library an article, "How to Make Clay Tile," and had coached her children on tile-making methods. They had set up a tile assembly line. Several strips of one-half in. by one-eighth in. sticks had been mounted on a large oil cloth covered board. These strips were arranged in 4 in. by 4 in. square forms. The clay was placed in the form, and a rolling pin was used to flatten it evenly to the desired thickness. Mrs. Hillyard had ordered terra-cotta colored Mexican pottery clay which came in dry form. When the tiles had been hardened to a leathery consistency, they were ready for the designs which the children had previously drawn with care on paper. Mrs. Hillyard had added some new articles to her already overladen junk box. Nutpicks, orange sticks, and toothpicks were the designing tools of this project. When the designs had been incised, the tiles were smoothed with a damp sponge and thus allowed to dry slowly. The assortment of Mexican and Indian designs were embellished with bright underglaze and sent to a commercial kiln where they were fired with a coat of clear glaze. The finished tiles were backed by adhesive hangers and displayed in an area that had been set aside in the room for that purpose.

On the playground, the traditional games had been forgotten in

favor of an original bull-fighting routine and an adaptation of an ancient Aztec game, *Tlachtli* (pronounced lack-i). A volleyball was used and a rectangular-shaped playing area was marked off. A large ring supported on a rope attached between two poles was placed at each of the opposing boundaries. The object of the game was to drive the ball through the opponent's ring by striking it with the hip. Several Mexican dances were learned such as *La Raspa* and the Mexican Hat Dance.

The children continually added new and misspelled words to their individual spelling lists and they were tested on these words by their spelling partners. They were very proud of the new vocabulary which they had acquired. Each committee wrote brief reports of their findings which were shared with the class and compiled into a class notebook.

The written reports, the tests, the oral reports, the discussions, all of the new concepts, the projects, and the play spoke for themselves. Old skills had been reviewed and improved; new skills had been learned and practiced. The children had learned to work co-operatively and learned to blend their ideas into solving common problems. They had new appreciations and a great deal of knowledge about the Mexican people and their way of life.

On a Friday afternoon, in May, a large group gathered in the classroom. The guests were the parents of fifth graders and pupils from the sixth-grade class. Even the principal had taken time out from her busy schedule to attend the play.

Judy, the leader of the playwriting group, introduced the play.

THE SPANISH AND THE AZTEC

(As the curtain opens Pedro lies asleep under a mesquite bush. The Aztec calendar is carried onstage by MONTEZUMA, AZTEC INDIAN, and CORTEZ.)

PEDRO (yawning): I must have been asleep! Wow! What is that doing here?

MONTEZUMA (clears his throat.)

PEDRO: Who are you?

MONTEZUMA: I am Montezuma, the second.

PEDRO: You mean the great leader of the Aztecs? Gee! What are you doing here?

MONTEZUMA: I am here to remind you of your Aztec heritage. I see that you are looking at our calendar.

PEDRO: Oh! Is that what that is? It frightened me at first, but now that I look at it again—I've seen that design on lots of things. I didn't know that it belonged to you.

MONTEZUMA: Many things you see and use today you have inherited from us.

AZTEC INDIAN: That serape you have on your shoulders was first woven by our women.

PEDRO: I bought this at the market place in Mexico City. Most of our people wear them. They are most useful.

MONTEZUMA: Mexico City? Hummm . . . before the Spaniards came we called that city Tenochtitlan—that was our capital.

CORTEZ: Yes, Montezuma, but we named it Mexico City.

PEDRO: Who are you!

CORTEZ: I am Cortez.

PEDRO: Cortez? Really?

MONTEZUMA: Yes, Really! He conquered us because we thought that he was our great god, Quetzacoatl, who gave us all of our arts and crafts, and the calendar, which you see here. Oh! yes, he really had us fooled.

CORTEZ: We came seeking gold, Pedro. (*turning to MONTEZUMA*) It just happened that we came in the same year that this Quetzacoatl fellow vowed that he would return to you. I don't know what this god promised to bring you, Montezuma, but I do know that we Spaniards brought a lot of good things with us when we came to your country. I want Pedro, here, to know that he inherited some things from us, too.

MONTEZUMA: Huh! What did you bring?

CORTEZ: Well, for one thing, we put a roof on your buildings that the walls could support. We brought glazed tiles, and towers and domes to grace your landscape.

MONTEZUMA: Yes, and you built many of your buildings right in places where our temples stood. Without our great art talent they would never have been so beautiful. Besides, what is more useful than food? You had never heard of corn, beans, or potatoes before you came here.

CORTEZ: No, that's true, but we provided you with the means to transport them to market. We gave you cattle, horses, and carts with wheels.

MONTEZUMA: And we gave you Aztec jewelry and artifacts.

CORTEZ: And we helped you mine your silver better.

PEDRO: Wait a minute! Wait a minute! Please do not fight all over again. Your peoples have learned to live in peace together. You are both my ancestors; and both of you have contributed a great deal to our life in Mexico today.

(Much laughter and noise is heard offstage. It gets louder as a group of Pedro's friends and musicians enter. Meanwhile MONTEZUMA, AZTEC INDIAN and CORTEZ exit.)

ALL: Hey! Pedro!

PEDRO: Where am I? Where are Montezuma and Cortez? I must have been dreaming. Boy, I'm glad that it was only a dream. Come on, everybody, let's dance.

(They dance to the music of their own musicians.)

The production was well received. After the play, the guests were invited to hear reports and see all of the exhibits which were on display. Visitors were also entertained with music and dancing in a short dramatic sequence simulating the greeting of tourists by hospitable Latin Americans.

The visitors were encouraged to read the creative writing products of the children. Some were in prose, some in free verse, and some with definite meter. A representative sample of these pupil creations follow.

THE ANDES
BY LINDA CARPENTER

Cloud covered peaks,
Reaching to the sky,
Only silence speaks,
Beauty to the eye.

When the clouds arise,
More beauty then is shown,
For stars fill the skies,
With wonder all their own.

When the moon reflects,
 In beauty then we see,
 A monument to God,
 As lovely as can be.

The Andes! Oh, the Andes!
 How beautiful they are,
 A silent lonely castle,
 Above the earth so far.

THE NIGHT OF MYSTERY
 BY LINDA CARPENTER

(My impressions of the Brazilian Jungle)

The monkeys are chattering noisily.
 The howler monkey is softly, drearily howling.
 The chinchilla is silently sleeping.
 The jaguar is crouching, waiting for his prey.
 The bushmaster slips silently through the underbrush to
 the quiet jungle pool which is now deserted.
 On this dark night of silence, the animals move slowly and
 gracefully.

THE BEAUTIFUL MACAW
 BY LINDA BASKERVILLE

(In Amazon Folk Tale Style)

Once upon a time, there was a beautiful Macaw bird who had a very peculiar color called indigo. The natives believed that this bright color would blind the bad spirits and that they would stay away. So whenever one of the natives got sick, they would bring the bird and make the bird fly around and around the native.

One day the village was very silent. The bird had disappeared, and the chief's beautiful daughter, Lieti, was sick. Kunar, the handsomest of all the young men, was very much in love with Lieti. He said, "My darling, don't worry. I am going to find the Macaw. Soon, you

will be well again." "Hurry dear," she whispered. He kissed her and started on his way.

As he was going deeper and deeper into the jungle, he met another beautiful bird and asked the bird if he knew where the Macaw was. The bird said, "No, but I will help you find him." As they went along, they came to a pond. They saw an alligator. Kunar was going to kill the alligator, but the beautiful bird said that this would be bad luck. So in order not to be eaten, Kunar thought of a plan. After much time, he found an Anteater and threw it in the pool. As the alligator ate it, Kunar and the bird swam by.

He went deeper and deeper, still not finding the Macaw. All of a sudden, he saw the Saki monkey. The monkey said, "You had better stop and rest for the night because when the sun goes down the vicious Jaguar goes out and looks for food."

Kunar said he couldn't wait because his sweetheart was very ill. Later that night he saw the Jaguar. They had a terrible fight and it took three shots with his blow gun to finally kill him.

Finally Kunar sat down to rest under a huge tree. Quietly the mighty bushmaster, sensing an enemy, slithered toward him. Thank goodness the bird warned Kunar. He struggled with the great snake finally killing it with his knife.

Just as Kunar was becoming discouraged, dawn began to break. Suddenly, he heard beautiful singing. He looked up and saw the most beautiful bird he had ever imagined. He didn't recognize it, but then he noticed the bird had some indigo feathers in his tail. It was the Macaw bird! He asked the Macaw to come back with him to heal the beautiful Lieti. "No," said the Macaw. "I will never go back. I do all the work curing the natives and what do they do for me? Nothing! I won't go back. People are always doing favors for them, and they don't do anything in return. They argue, fight, and don't live the lives of good people." Kunar pleaded, "You don't have to do this for the natives, you are doing it for Lieti. She is so kind and beautiful. You don't want to let her die because the natives are so awful. Please come back." Finally, the Macaw agreed and went to the village.

The beautiful Lieti was almost dead, and the people were already mourning. The Macaw flew over her and told Kunar to get rid of the people.

Lieti finally got well and Kunar and she were married. Immediately

after the wedding, they announced that they were leaving because they weren't going to stay with that kind of people anymore. The native people begged them not to leave. They promised to change their ways and asked Kunar to become their chief. Kunar was persuaded to stay and become their chief. The village became happy and prosperous, and the beautiful Macaw bird stayed with them forever.

As the visitors were leaving Mrs. Hillyard's classroom, two charts, which were obviously the result of coöperative thinking, were noticed which seemed to confirm the effectiveness of pupil learning in this situation. One was entitled "When Our Work Is Done," and the other was headed "Good Citizenship Rules." The work of the children was done effectively, creatively. Good citizens were developing under Mrs. Hillyard's guidance.

ACCENT ON FINE ARTS

In the second class situation, Miss Winifred Rinker provided her fifth-grade class many varied activities which might be labeled primarily creative. However, if an observer chose to ignore the many manifestations of creativity in Miss Rinker's classroom, he still would find a substantial adherence to basic content and skills, related in most cases to prescribed textbooks and coördinate material. The chief difference between this basic program of Miss Rinker's and that of many teachers lies in the management of such a program in terms of the group problem projects and of the differences among pupils. With Miss Rinker there is a careful pacing of such materials with the individual's maturity.

The more systematic textbook programs undertaken by pupils in this group are far more appealing to them, apparently, because of the general climate of feeling which the teacher creates by her manner, procedure, and zest for teaching. The pupils at all times appear genuinely happy, enthusiastic, and free from tension. They have a well-knit child society operating in the classroom, free from undue teacher domination. This child society has its own way of promoting morale and discipline among its members. Miss Rinker has an unusual understanding of the folkways and mores of this

society and relates herself to it in ways that impel it in constructive directions and toward social maturity.

SCULPTURE IN VARIOUS MEDIA

One of the many areas of creativity observed in Miss Rinker's class was an unusual program of sculpture in which pupils used a variety of materials: soap, papier maché, balsa wood, paraffin, chicken wire and cotton, and a combination of some of these. Some of the soap and wax carvings were intricate in their detail. Pupils arranged an attractive exhibit of their smaller carvings on glass shelving attached to the large peg board at the rear of the classroom near the aquarium. An interesting example of chicken wire and cotton sculpture was the llama which was made during the project on South America. Leading to a more complex group of creative activities was the making of papier maché and asbestos pulp heads for marionette dolls.

MARIONETTE MAKING AND PRODUCING MARIONETTE DRAMAS

An observer in Miss Rinker's classroom would immediately notice the marionette theater, conspicuous in its size and superior construction. This marionette theater is the center of several types of educationally effective activities. Preparations for the production of a play display the complex group behaviors necessary for the operation. These coöperative activities must be organized and led well. The rationale of this classroom, i.e., the pupils, their well-organized society, and the subtle guidance of Miss Rinker, accounts for the smooth functioning of this operation.

Many of the plots for the marionette plays come from children's literature but the children rewrite them in their own words. However, many of their plays are extemporaneously produced. Several original plays by individual children are written every year. This is not required of all pupils. Miss Rinker apparently remarks off-handedly that original playwriting has been done in her former classes and that anyone might try to write one if he so chooses. The children especially enjoy producing a marionette in the ex-

temporaneous mode, whether from original class material or from children's literature.

The children create their plays, the theater, the marionettes, the stage settings. Also they design elaborate lighting effects. The plays have scenes, acts, ample action,—and sometimes strange conclusions. More than once during the year, they invite their parents to see the plays.

PAGEANTRY, DANCING, AND MUSIC

Usually, when the children invite their parents to the classroom to see their marionette plays, they also prepare a complete program including folk dancing, fashion shows or pageantry, and music. The musical activities may include singing or playing of instruments by the children. Often these activities take on the motif of the project presently going on in the class. The ideas for these aesthetic activities usually come from the children themselves.

The class projects nearly always give impetus to collections of data, drawings, pictures, maps, and written reports which the children want to preserve in the form of a scrapbook. These scrapbooks often become the objects of much sharing and discussion. During the culminating reports at the end of a project, they are often referred to by pupils to demonstrate that they have learned.

CREATIVE WRITING

Of all creative activities in Miss Rinker's classroom, perhaps the original writing has the most significance in developing the kinds of competencies which the community characteristically expects of the school. During the year (1958) these activities were observed, Miss Rinker's group took first, second, and third prizes in a city-wide essay contest. In addition, another child received honorable mention. The classroom rationale which helps to produce and refine this type of creative ability should be described.

There is one obvious fact in this class activity of creative writing: it requires large blocks of time during the day, week, and month. Other characteristics are: (1) group discussion precedes

creative writing activities; (2) each child is allowed to choose his own topic without undue pressure from either the peer group or from the teacher; (3) the mechanics of language is freely discussed and even argued by class discussion, the teacher avoiding any lecturing on the formalized, correct way; (4) the habit of rewriting a story, play, or book at least five times to achieve polish is carefully developed; and (5) pupils who write well need to have a rich supply of interesting books to read on their own individual level.

The prize-winning essays written in the spring are not reproduced here. One of the books written earlier in the school year is presented below. Some of the best were not reproduced here because of their length. The example presented is from neither the best nor the poorest which the class produced. This book demonstrates, however, the complexity and length which can characterize the creative writing of 10-year-olds. The reader may contrast this literary example with stories written by younger children as reproduced in earlier chapters, particularly Chapter 9, to observe the growth that can be expected of children in the language arts.

THE ADVENTURES OF THE JONES FAMILY BY DENNIS STEIN

Chapter I. Getting Ready and Leaving

Once upon a time there was a family named Jones. There were Ma and Pa Jones, Sally, and her brother Dick. Dick was 21 and Sally was 12. Dick had gold fever and wanted to go to California with the rest of the people in town. Mother and father didn't want to go but Pa gave in and they got Tom White, the blacksmith, to build them a covered wagon.

They were ready to leave the next week. Sally was so excited she almost went wild. Pa had one of the biggest wagons in the train, and there were twenty altogether.

They left early Friday morning on the Oregon Trail. They went about twenty miles when they were slowed down by the rivet, where two of the wagons got stuck in the mud and one of the oxen got stuck and drowned in the river. That night everyone thought they needed

a party to lift their spirits. They had dancing and just about everything you could think of.

Everyone got up about five in the morning. Sally was so tired they had to argue with her to get her up. They were back on the trail in an hour. Sally was complaining all the time from morning until noon. At noon they all had stopped to eat. Dick was one of the scouts on the wagon train at the time. The Joneses ate and then they were on their way. The Captain of the train was old Major James, he was also an old hag about children playing and yelling around the wagons. Of course the children hated him, even Sally, which was very unusual for her, because she liked everybody in the train except Major James and Mr. Hogan who was just like Major James.

One day Sally walked past Mr. Hogan's wagon carrying a bucket of water. She was singing so loud that Mr. Hogan came out of his wagon and started yelling at her. She took the bucket and threw it at Mr. Hogan and then ran like a scared jack rabbit.

Chapter II. The Renegade Indians

One day while Dick was out scouting he saw some bushes move. He got off his horse and walked over to the bushes and kicked them. All of a sudden before he could do anything an Indian popped out! Dick and the Indian started to fight. The Indian had war paint on and had a knife and a tomahawk. Dick took the end of the barrel of the rifle and swung it at the Indian and hit him. He brought the Indian back to the Major. They made the Indian talk. He said that his band of Indians were about to attack, in two sunrises.* That night Sally heard some howls and she couldn't go to sleep. The next morning while they were riding along she told her mother and father about the strange noises she had heard the night before. Mrs. Jones told the rest of the women and then she had all the women scared to death.

The very next day while Jim Harper was out scouting he saw a band of Indians in a piece of land well hidden and not very far away from the wagon train. Jim rode in as fast as his horse could go and told the Major about the Indians. The Major had all of the wagons make a big circle. Just as they had completed the circle they heard war whoops. Then, out of nowhere, thousands of Indians came riding down on horses.

* In 2 days.

Dick was hit in the arm with an arrow. They fought until sundown, then the Indians took off. Most of the Indians were killed but only four of the men were killed and five were injured.

The next morning they were on their way again. Major James said that the Indians wouldn't come back again and they were all glad to hear that.

Chapter III. The Lost Baby

One day while Sally was riding along she heard a crying noise. She asked her father if she could go and see what it was but Pa said, "No, you can't because there are too many Indians around." Sally decided she wouldn't go but then she heard it again and jumped off the wagon. There in the bushes, to her amazement, she saw a little baby in a brown basket. The baby had black hair and blue eyes, and was crying its little heart out. Sally picked up the little baby and ran as fast as she could go, so she could hop up on the wagon and hide the baby under some covers until she could tell her mother about it. She told her mother, and she said they could keep it until they found out whose baby it was.

One day while Sally was feeding the baby some Plains Indians came and said they wanted the little baby. Sally ran and hid the baby in an old trunk which had a hole in the side so the baby could breathe. Sally told the Indians that she didn't know of anyone in the whole wagon train that had an Indian baby. The Indians couldn't understand her and Jim Harper, who was part Indian, translated for her. The Indians rode off but didn't believe them at all.

That night a warrior came and stole the baby but the guard shot him. Then like a shooting star out of the sky came a woman dressed in silver and asked if she may have the baby to take to its mother and father. The guard said, "Yes," and fainted. Later, stories went around the camp that the lady was an Indian Goddess, so I am told.

Chapter IV. Crossing the Rockies

The wagon train was just ready to start out when Dick rode in yelling "Rockies Ahead!" Everyone let out a big groan, but the children, including Sally, were thrilled. Yelling "Whoopie," "Hurtah," and "Yea," they started dancing all around the wagons.

Then it started, rough roadways, up, up, up, they went. Wagons

needed more and more repairs every day. Mrs. Tucker's boy got pneumonia and almost died. Every thing started to go wrong, the people were weary, the animals tired and the children cross, but it wouldn't be too long until they came to Oregon. At one point the way was so bad that Major James told everyone to unload all unnecessary baggage. They piled it all in a big pile and put a sign on it, "We Couldn't Carry All Of This, If You Can, Help Yourself." Five oxen and two dogs died on the way the last three days.

They ran out of water and couldn't go any farther, all they had was the little water the women had for cooking and for the oxen and other animals. They were limited to very little water each day. This lasted for two days.

The men went out looking for water. There was supposed to be a creek about fifty miles away. The men had started out on horseback, leaving the women and children behind. The first day they went about fifteen miles. That night they voted on a leader since Major James wasn't there. They chose Dick, as he was younger than most of the men.

The next morning just after they had started Dick noticed one of the horses was very lame and after a meeting they decided to shoot it, as there was little hope of trying to save it. Trouble was really following them, the next day three more horses were sick with some kind of fever. They too had to be shot. Three horses had died of thirst and hunger. This left only three horses and eight men. They still had ten miles to go to reach the creek. When they found the creek and saw water in it the men were overjoyed and were in a hurry for the men with horses to go back after the rest of the wagon train.

They sent Dick and Bob Harper back with a supply of water. The people were grateful to the two men for the water. It seemed like years since they had seen so much water. Dick and Bob led the wagon train to the creek and all vessels were filled for the rest of the journey.

Finally they reached Oregon. Soon after, Dick left his family to go and look for gold. Pa stayed in Oregon and started his farm.

SUMMARY

Although the curricula of both these fifth-grade classrooms are particularly characterized by creativity, the class projects on Latin

America were full of opportunities for the development of new skills and concepts. The following are some of the areas of contact with significant subject matter other than the arts and democratic process:

1. Characteristics and hand tooling of silver ore
2. Indian and Spanish architecture
3. Indians of Latin America
4. Natural resources of Latin America
5. Air travel
6. Coffee production
7. The Maya, Inca, and Aztec cultures
8. History of Spanish America
9. Economic development of modern Latin America
10. The rain forest
11. Comparative calendars
12. Area and diameter of a circle
13. Concentric circles and vision of a circle into various sized angles
14. The compass and the protractor as tools for more effective problem-solving
15. Map construction
16. Picture and bar graphs
17. Electrolysis of silver
18. Mexican literature
19. Spelling
20. The mechanics of language
21. Literary forms.

In addition to the learnings like the above, derived from group activities, each pupil advanced in many ways consistent with his own interests and abilities, whether mastering the addition of fractions or playing a trumpet.

CHAPTER 13

Learning Experiences of 11-Year-Olds

DRAMATIZING TOM SAWYER AND HIAWATHA

Much of the success of Mr. Marvin Martin in developing an interest in literature among his pupils stemmed from his own personal appreciation and its vocal expression.¹ Besides his contagious enthusiasm, he interpreted literature dramatically as though an actor and by spontaneous groupings of children for short dramatic sequences, coaching the children to "walk through" a situation to get in the "feel" of it. The children responded with enthusiasm and quick insight. The will to produce a rather finished pageant often emerged from these classroom contacts with literature. Two of such productions take the spotlight in this chapter section. The first of these emerged from Mr. Martin's introduction of Mark Twain's *Adventures of Tom Sawyer*.

Mr. Martin initiated the learning experiences on the Tom Sawyer theme by reading some parts of the book to the children. His dramatic expression and bodily movement set the stage for a discussion of the events in the story. He invited several children to come to the front of the room and try out the action suggested by the lines. More discussion was stimulated as suggestions were offered from all over the classroom. Often Mr. Martin asked a

¹ The learning experiences described in this chapter took place in two distantly located sixth grade classrooms; the first situation is that of Mr. Marvin S. Martin, South School, Glenview, Ill. The second classroom situation is that of Mr. John Wall, Cragin Elementary School, Tucson, Ariz.

tasks led to further reading, the extension of skill development, and the stimulation of intellectual and aesthetic concerns.

LEARNING ACTIVITIES RELATED TO "THE SONG OF HIAWATHA"

Another masterpiece of American literature was dramatized, complete with authentic costumes, by these same sixth graders when they took up the reading of Longfellow's "The Song of Hiawatha." These dramatic sequences were developed into a color film and film strip under Mr. Bonhivet's direction. The filming of "Hiawatha" came as a culmination activity after several weeks of intensive work and study, and took place in a locale north of Chicago, which offered ideal settings for the Hiawatha story. During the final week long hours of rehearsal followed upon memorization of lines, the making of costumes, the collection of appropriate properties, the carving of a realistic totem pole, and special instruction on poetic interpretation. A group of parents transported the children to the movie site and helped them apply make-up, set up wigwams, and arrange settings. The narration was recorded on tape, and later the film and recording were used to present the movie at another school for friends and relatives.

The project on the theme of Hiawatha resulted in many worthwhile learning activities in several curriculum areas. The children plunged deeply into Indian lore in social studies and covered a broad geographical area of exploration. The language arts curriculum constantly was enriched with reports and creative writing around the Indian theme. The art, music, and rhythmical activities were particularly rich, securing enthusiastic participation by the children.

SCIENCE ACTIVITIES

Mr. Martin provides effective experiences in science as well as in social studies, literature, and the other curriculum areas. Several animals are housed in the classroom regularly in addition to the aquarium and the terrarium. Ordinarily he guides the development of several full-scale projects in science during the school year. One project on the animal kingdom touched most of the cur-

riculum areas as an integrating force. Typically, also, Mr. Martin capitalizes upon the immediate interests and concerns of children to develop lessons and short projects in science. Science in literature and in recreational reading also come in for much attention in his classes.

CREATIVE WRITING ACTIVITIES

Mr. Martin's sixth graders, as would be expected, produced a tremendous volume of creative writing, much of it of unusually high quality. The emphasis on literature and dramatic interpretation and representation which is characteristic of his teaching undoubtedly contributed significantly to the will and the desire of pupils to express themselves in original writing. The selections included below are characteristic of original products which emerged in Mr. Martin's classes. None of these selections are specifically related to either the Tom Sawyer or the Hiawatha projects even though some of them were written during the time these projects were carried on. The selections which were developed during these projects indicate how stimulation in one theme, or the creation of a favorable climate for imagination, will carry the child much farther in creativity than that specifically hoped for within the planned curriculum. The original pieces of literature presented below indicate to the prospective teacher what may be expected or hoped for from the children of Grade 6.

THE CHANGING DAY

A WORD PICTURE BY LAURIE LEWIS

It all started out as a beautiful day. The brook danced along on its merry way. The flowers opened as if to say, "Good morning, Mr. Sun." The grass stood out beaming and the trees sprinkled their leaves gayly on the ground.

Suddenly the brook stopped dancing; the flowers lost all their gaiety and the grass its lovely beam; the trees stood shivering on the ground, dropping only sad-looking leaves. The sky was grey. All the loveliness of earth was gone; dullness everywhere was looking over the ground.

Then, almost as suddenly as greyness had appeared, joyousness once more showed its face. But before life had a chance to show itself, the horrifying darkness reappeared.

Darkness, light, darkness, more light! The day carried on its course. The sun reappeared. Life was once again visible. Mother Nature showed off her dainty works.

So the day continued. But slowly again came signs of sadness. Gayly pattering rain drops, then dark. Ugly dark, sadness, rain, all painted out in grey-filled skies. Thus ended the most changeable day.

THE OLD MAN AND THE DEED A STORY BY PAM VAINDER

The old man walked wearily across the desert. He had been prospecting for gold, and had not been lucky. He could remember better days when he was younger. Then he had been very rich. But he had been foolish then, and he had spent his money very fast.

Walking, head down, he saw a piece of paper. It was crumpled and old-looking. Slowly he read the words for he had not had much education.

"This is the deed to the King's castle," he thought. Wicked plans began forming in his mind.

The next day, bright and early, he went to the King's castle. As he walked along, he heard the birds chirping and he looked at the deep, blue sky. He noticed how bright the sun was. He lifted a dirty hand to wipe his brow.

"Well," he thought to himself, "it's sure worth it."

By sun down, he neared the town. It was quite chilly out now and the wind played about him. At last he reached the King's castle. He walked right in. The guards immediately stopped him.

"Let me in my castle," he shouted sharply.

"Go away, old man," replied the guard, "before the King sees you and gets angry."

But the old man shook his head and pushed his way through the guards.

The King was furious at this. "Get this idiot out of my castle!" roared the King.

"My castle!" was the old man's only reply.

The King got down from his throne and the old man was about to

take over when the King said, "Just a moment! Let me see that deed."

After reading it, the King laughed. "Why you fool, this is a deed to the old castle that was wrecked a hundred years ago. Now *you* get out of *my* castle and never come back."

So the greedy, old man left and went back to the desert and his prospecting.

A MOUNTAIN DAY

(A group poem written by the members of Mr. Martin's Sixth-Grade Class)

The sleeping sun awakes in the East;
It rises and stretches its crimson arms,
And with the coming of the sun,
Beauty comes to life in the rugged snow-capped mountains.

The mountains stand erect and rigid,
Sheer cliffs, steep jagged slopes;
Mountains rising toward the sky like grim giants,
Beautiful, snow-capped and majestic;
Gleaming white peaks that reach up to the sky
As if to say,
"Here am I!"

Rugged,
Jagged,
Majestic!

The lovely mountains shine
When the bright sun hits the snowy peaks.
"I'm happy! I'm free!" shouts each brave peak,
As it towers above the silent forests.

A cool, summer breeze leaps down from the peaks
And finds its way through dense green forests,
Emerald hills of green,
Rustling trees
That stretch their arms forever upward
'Til they reach the sky.

Everywhere we look,
Beauty and life;

There on the ledge,
A light-footed doe and her fawn,
A Mother searching for food to keep her young one alive;
Peering down on the rolling land below—
On the rolling hills, the rolling plains,
The prairies gently sloping,
Where cattle graze peacefully all the day long,
As the soft wind whistles
Through the waving fields of grain.

In the canyon, there's a man,
A miner, beaten down, yet searching,
Hoping to find a spark of hope
Locked tight in the mountains' granite arms;
Searching for the mountains' secret wealth,
Copper, gold and silver.

Silver glistens in the light from the miner's hat.
The steel rigging of the mine
Floats high into the deep, blue sky.
The golden stream flows away from the mine
On an endless line of dark grey cars.
In the smelter, the stuff is melted
Into bricks of yellow gold.

The sun stands tall in the southern sky,
And the melting snow glistens.
Slowly, it begins to flow down deserted mountain passes,
As it becomes a gurgling stream,
Tumbling over jagged rocks,
Rushing down the mountain sides,
Dashing,
Tumbling,
Plunging,
As if running away from something.
Now it becomes a ferocious river,
With charging falls,
Gouging out the solid rock;
Only to become lazy rivers,
Echoing their light into the canyon above,
And lakes, settling down in quiet places to rest.

The snow, the water—they mean life to the mountains.
But the cool life-giving waters do not reach the desert.
There, the tall cactus stands, thirsty and alone.
The tedious, burning, sizzling desert,
That seems to scrape and burn
All the water from your body;
Burning sun, golden sand, barren wasteland,
Looking like they're dying for just a taste of water.

To quench the burning lips of the desert
They build dams,
Big dams to stop miles and miles of clear, blue water;
To feed crops, to quench the thirsty sands,
To make power for towering cities
Beyond the far horizon,
To light the spheres that gleam inside the city at night.

And now the weary sun declines.
It settles down across the plains.
It nestles down behind the mountains
So that they look like they're on fire.
The setting sun means work is done;
Mountains sleep, rivers sleep, deserts sleep;
Work is done for another day.

LOST AND FOUND

A STORY BY BRUCE BAUMGART

The harbor is a fast moving place. On pier 101, a freighter is being loaded. The cranes carry cargo up high into the air and down into the hold of the huge ship. Up, down, up, down. The ship rocks and rolls on the mooring lines.

The night comes fast. The stevedores go home. The early morning comes. Everywhere it is quiet.

Rats and mice begin to chew on the mooring line. Hours pass; the rats chew on slowly. The ship is loose. It drifts out to sea. It glides alone on the water, rolling from side to side. It drifts south and the water gets choppy; the ship rises and falls. Rain pours down. The waves beat the sides of the ship and push it onward, ever onward toward the rock reefs of far lands.

It runs between the rocks sticking up offshore. The ship glides around, back and forth, to and fro. It comes fast toward shore with quiet waves.

INDIVIDUALIZATION IN LEARNING

In another Grade 6, Mr. John Wall provides for individual interests and abilities in his classroom with an ease that would astonish many teachers who lack security when departing from a rigid course of study. He attempts little mass teaching because he knows the futility of trying to teach the same subject matter to children whose mental ages alone range widely from below eight to above fifteen years. Achievement in the basic school subjects will vary to a corresponding degree among such children, and Mr. Wall seldom finds it possible to organize the entire class for a project because of the great heterogeneity of interests. Typically, then, pupils in his class pursue an individual curriculum. They come together as a unit primarily for current events, folk dancing, and to plan a program.

Although individualized, the overall program of skills and subject matter is tied in many instances to basic textbooks. Pupils are expected to make systematic progress at their level of ability in the basic curriculum. Some children work in two's and three's in mastering basic skills in terms of textbook exercises. Others work alone. If a pupil works with another in the basic curriculum, it is through his own choice of partners.

Running parallel with this individualized program of basic skills and concepts geared to textbook progression is a program which Mr. Wall calls, "Special Projects." The special projects are sometimes related to the textbook learning experiences, as in social studies, but typically these projects are related to the present concerns of individuals. Again, two's and three's may work together on a project, dividing labor in a cooperative endeavor. Very often, however, these special projects are entirely individually engineered and developed. These projects may represent any area of the curriculum; in fact, Mr. Wall guides an individual into the selection of a project in a different curriculum area when he feels that pupil

may have concentrated his work in too narrow a field through several successive projects. For instance, a boy highly interested in arithmetic or science may neglect history or geography as resource areas for research if not led by the teacher to formulate problems which cut across these fields.

The spelling program in Mr. Wall's classroom is entirely individualized. The way in which he has organized the spelling program saves a great deal of instructional time. Each pupil keeps his own spelling list. The list is made up of words that the individual has attempted to use in writing activities without initial success. When a word is missed on a draft of a report or story, that word immediately is added to the spelling list. Mr. Wall keeps an informal check on these lists, each of them different though with some words in common, and occasionally suggests the addition of words from the state adopted spelling book. This is especially true if an able child is not working up to his capacity in spelling. The main emphasis, however, is upon learning to spell the words used in writing activities.

On Monday, each pupil dictates his spelling list on the tape recorder. Each knows that he will play back his own list on Friday, thus dictating his own test. As the words come through the headset, he writes in a test situation as if Mr. Wall, himself, were dictating the words. Each pupil takes his turn with the tape recorder, either in getting his words on the tape or in taking the test. This activity goes on constantly without disturbing the class. It is automatic and without confusion. When one pupil finishes with his list, the tape is stopped and he notifies the next pupil quietly that it is his turn for spelling. This spelling program is notable for the time it saves the teacher, the degree of individualization, and the functional activities in writing with which it is interactive.

Individual progress in arithmetic is based primarily on textbook and workbook exercises supplemented with functional grouping in areas where several pupils have a mutual difficulty. These functional groups may be taught directly by Mr. Wall or function independently through discussion and practice. Individual drill or review on multiplication or division facts is provided through the

use of an electric board (or cube) on which the combinations are arranged. When the pupil gets the correct answer by manipulating the device, a light will flash. This electric drill device may be in constant use like the tape recorder.

At least two pupils work together usually on map-making in Mr. Wall's class. The common practice is to trace the map from a projection of the opaque projector. When the outlines of the map have been made, the operation moves to the classroom floor where most of the painting and labeling is done. Ordinarily, the outlines are inked with a felt-point pen; tempera paint used for the colors of the various sub-divisions or countries. The names of cities, rivers, mountain ranges, or countries printed either with the felt pen or, for very small lettering, with a fine pen and India ink. (At least one salt map was observed in the room.) The painted maps usually were displayed on a bulletin board when finished.

Individual projects were too varied and too numerous to describe in detail. The making of an animal cage for the primary classes to house their animal guests was in process. Another completely individual project was the assembling of a model oil refinery.

Perhaps the most unusual project was the construction of a working solar furnace. Using the heat and energy of the sun for modern technology in a state possessing almost unlimited solar radiation appeared to fascinate the three boys who participated in the project. They proved the workability of even a small scale model of the solar furnace by cooking sausages by the heat of the sun. The study of the scientific theory underlying the solar furnace became a part of the learning experience of one of the boys who worked on the project.

DRAMATIZING GEOGRAPHY

One of the most novel practices which the author observed in Mr. Wall's classroom was the dramatization of geography through dialogues and plays written by individuals. The sharing of the individual dramas had the cumulative effect of a vicarious tour of Europe as each of the pupils wrote about a different city or coun-

try. One of these geographical dramas will demonstrate the social studies and language arts values of this type of activity.

A DAY IN KIEV
BY KATHRYNE PYE

Key to Characters

| | |
|------------------|----------------------|
| —Narrator | Miss Vavra (Elsie) |
| —Waiter (Walter) | Miss Malenka (Kathy) |

NARRATOR: Miss Vavra is on the plane coming from Astrakhan. Now, she is landing in Kiev. She has phoned a guide in the airport waiting room. Soon, the guide arrives.

MALENKA: You must be the person who phoned the guide bureau.

VAVRA: Yes, I am. What is your name? Mine is Miss Vavra.

MALENKA: You may call me Miss Malenka. First, what would you like to do? Are you hungry? Would you like something to eat?

VAVRA: First, I think I would like to see a little of the city.

MALENKA: We can go to one of the large churches.

VAVRA: All right.

NARRATOR: On the way to the church in a taxi.

VAVRA: What is the population of Kiev?

MALENKA: Oh, around one million.

VAVRA: The streets are so wide!

MALENKA: What did you expect them to be? Little trails?

VAVRA: No, but they still look wide to me. I guess it's because I'm not used to eight lanes.

MALENKA: That's probably why.

VAVRA: What are the big industries?

MALENKA: Mostly machinery, shoes, sugar, flour, and agricultural products.

VAVRA: Do you make a lot of war equipment?

MALENKA: I can't answer that question completely. Kiev makes some, but not a lot.

NARRATOR: Crossing the Dnieper River.

VAVRA: What river is this?

MALENKA: This is the Dnieper River. It starts in northern Russia. It is about 1,500 miles long.

VAVRA: This seems to be a very long bridge.

MALENKA: Yes, it is. It is also a fairly well-known bridge.

VAVRA: How wide is the Dnieper River at this place?

MALENKA: Oh, about half a mile. Here we are at the cathedral!

VAVRA: It's large, so very large! How many domes are there?

MALENKA: Approximately fifteen. You can see the big onion-shaped domes.

VAVRA: Wouldn't you get lost in there?

MALENKA: Well, maybe.

VAVRA: About when was this cathedral built?

MALENKA: They started building it about 1780, so that means it took about twenty-five years because it was finished about 1805. This is where Christianity was first introduced in Russia. We won't have time to go in if you are going to be here only a day, but you may ask questions.

VAVRA: What are in the domes?

MALENKA: Mostly mosaics and statues.

VAVRA: What are mosaics?

MALENKA: They're colored glass squares cut and put back together, arranged to make a picture or a pattern. We had better leave the cathedral.

VAVRA: Yes, I think we had better—but it is very beautiful.

MALENKA: Now, where would you like to go?

VAVRA: I'm getting hungry. How about you?

MALENKA: Yes, I am. There is a nice little restaurant around the corner.

NARRATOR: In the restaurant.

WAITER: Here are the menus. I'll be back in a minute.

MALENKA: What would you like to have?

VAVRA: What is caviar?

MALENKA: It is fish eggs. One of the most favored foods in Russia!

VAVRA (*say rather reluctantly*): Well, I guess we might as well have that. What's there to drink? And won't there be something else to eat?

MALENKA: Let's have tea to drink. It is the favorite mealtime drink in Russia, you know. Oh, you also asked what else we would have to eat. Usually with caviar we have tea rolls, and pie, sweet breads, or cake roll.

VAVRA: All right, let's have tea rolls and cake rolls.

NARRATOR: In Russia, around Kiev, the people eat a lot of bread, because this is Russia's "Breadbasket."

WAITER: Now, what have you decided you would like to order?

MALENKA: We will have caviar, tea rolls, cake roll, and tea.

WAITER: Yes, ma'am!

VAVRA: My, this is a nice day! Is this kind of day typical of Kiev?

MALENKA: Yes, this kind of day is typical of Kiev, in Spring.

VAVRA: What is the rest of the year like, I mean the climate?

MALENKA: Most of the year, it is about like Kansas in the United States, with the temperature range from 20 above to 75 degrees. Hear the music? Peter Tchaikowsky composed that. He was one of Russia's greatest composers.

VAVRA: What is the name of that piece?

MALENKA: That is the "Waltz of the Flowers" from *Nutcracker Suite*.

VAVRA: It is very pretty. About when did he live?

MALENKA: Tschaikowsky lived from 1840 to 1893. He lived to be 53 years old.

VAVRA: What was his life like?

MALENKA: Well, he started out to be a lawyer, but then he gave his attention entirely to music. He died around November 1, in 1893.

VAVRA: What else did he compose?

MALENKA: One thing that usually follows this piece is the "Andante." I think it will be played in a while.

WAITER: Here is the food.

VAVRA—MALENKA (*after being served*): Thank you!

WAITER: Thank you!

VAVRA: I'm going to taste the caviar! (*Tastes it.*)

MALENKA: How do you like it?

VAVRA: It's O.K. Maybe by the time we finish eating, I will like the caviar fairly well. I've heard quite a bit about the Ukraine since I have been in Kiev. What is it?

MALENKA: The Ukraine is one of the sixteen states of the Union of Soviet Socialist Republics (U.S.S.R.). It is one of the most populated of Republics.

VAVRA: What city is the capital of the Ukraine?

MALENKA: Kiev is.

VAVRA: Is the Russian Orthodox religion the most popular religion in Russia?

MALENKA: Yes, the Russian Orthodox religion is the national religion.

VAVRA: What about education in Russia?

MALENKA: Here in Russia the boys and girls go to school ten years instead of twelve years as in the United States. They go to school six days a week.

VAVRA: What do they have to do before they get into college?

MALENKA: They have to rate high in all their subjects.

VAVRA: Where are the large universities in Russia?

MALENKA: Some of them are located in Kiev, Moscow, Leningrad, and Kharkov, but there are more than 700 colleges and universities.

VAVRA: There is the "andante" by Tchaikowsky.

MALENKA: Yes, I noticed. It is very pretty. Well, I guess we're finished. Shall we leave?

VAVRA: Yes, I guess we might as well.

MALENKA: Now I will see you off to your room in the hotel. Get a good night's sleep because you will have to get up early tomorrow to go to Moscow.

VAVRA: Good night! And thank you!

SUMMARY

Eleven-year-olds find literature fascinating when the teacher helps them dramatize a story by demonstrating himself and coaching them in playing the various roles. Participation, or getting-into-the-act apparently does wonders for the pupil in developing understanding and appreciation. These vivid dramatic experiences with literature lead to significant creative writing products. Relating literature constantly to creative writing leads also to improved mastery of the mechanics of language. Recreating a story or building an original narrative calls for intensive practice of all language skills.

Dramatization of geography contributes to understandings in the social studies area and to concepts and skills in language arts. Individualization in spelling is a natural consequence of a utilitarian approach to language improvement.

CHAPTER 14

Learning Experiences of 12-Year-Olds

The experiences described in this chapter took place in two different communities and in different types of schools. The first situation is that of a self-contained classroom in an elementary school in which a single teacher guides the organization and development of learning with the help of consultants in art, music, drama, dance and various fields as class projects demand. The second situation is that of a seventh-grade language arts class in a departmentalized junior high school.

A PROJECT ON INTERRELATION OF THE ARTS

The principal of the school¹ suggested to Mrs. Dorothy Johnson and her colleagues at the beginning of the school year that action research might be tried in each classroom to discover additional ways in which teachers could lead children to learn through solving, or attempting to solve, significant problems. He stated that action research involved trying something new on the job. A teacher might ask himself, "What would happen if I tried _____?" Should he follow up the question with plans and definite action, he is engaging in action research.

Mrs. Johnson thought of what she would like to try with her boys and girls. She was an experienced teacher but new in this school. A conventional program in social studies for Grade 7

¹ Children's School, National College of Education, Evanston, Ill.

would involve her pupils in a study of the development of civilization. Science would have its own focus. Literature would be taught as a separate subject. The art and music teachers would work out a program with her or take the pupils for special lessons outside the classroom as she desired. Arithmetic would be dictated almost exclusively by the textbook programs which pupils followed, each at his own pace. The whole would be an adequate but not particularly challenging program. Mrs. Johnson wanted to make learning in her classroom the kind of motivating quest which brings solidarity to the class group and yet makes individual learning a thrilling experience for each boy and girl. To her, then, the "adequate" learning program was unthinkable when a more challenging one was possible.

Mrs. Johnson had worked with her pupils for several weeks when she began to feel that they could profit from a study of the interrelation of the arts both from the standpoint of appreciation and from the standpoint of cues to cultural and intercultural understanding. How to promote this study of the arts and at the same time make it meaningful was her action research problem. As she thought of ways to initiate the study, she wondered if she should not begin with leads to conventional resources in the classroom, gradually collecting additional resources and at the same time using the rich cultural resources of the Chicago metropolitan area as the quest developed. Most of the geography and history books on her classroom shelves featured the development of civilization from ancient societies down to the present, and could become a ready reference.

HOW LONG AGO WAS 3000 B.C.?

Mrs. Johnson attempted a beginning by asking the class: "How long ago was 3000 B.C.?" The pupils responded with interest, but the discussion produced conflicting answers. This presented an opportunity for Mrs. Johnson to encourage the boys and girls to search through the textbooks and reference books in the classroom. Before freeing them to do individual research, however, she reminded them of the value of the table of contents, the index, and

the skill of scanning through quantities of material to find pertinent data. She also taught them how to take brief, concise notes on relevant material and how to write reports with adequate documentation.

The pupils practiced these skills as they sought the information they needed to answer the question. As they read, some became interested in archeology, others in irrigated farming, and still others in hieroglyphics, the geometry of the pyramid, or Egyptian climatology. Soon the question of "How long ago was 3000 B.C.?" was answered and left far behind. Hoping to extend language skills, Mrs. Johnson suggested that the pupils try to write literary forms other than the report. Stories, poems, and dialogues sprang almost spontaneously from this suggestion. An example of a pupil's imaginary dialogue between two slaves of ancient Egypt follows.

AN EARLY EGYPTIAN DIALOGUE BY RICKY DEAR

Place: One of the big pyramids

Time: Pyramid Age

Scene: One slave meets another slave on top of a pyramid

Number of characters: Two

FIRST SLAVE: Oh, this stone is too heavy! Each one seems to get heavier and heavier.

SECOND SLAVE: Oh, after you have worked as long as I have, you wouldn't think so. The reason you think they are heavy is because you have worked so little. Take me, I have helped build King Khufu's tomb.

FIRST SLAVE: You did?

SECOND SLAVE: Of course I did, but that's not all. I've been to Giza's quarries. I have also been on the barges taking stones to the great pyramids. I have carried gold and marble statues into the pyramids.

FIRST SLAVE: You must be somebody great then if you got to do all these things!

SECOND SLAVE: No, I am just an ordinary slave worshipping Pharaoh Khafre. Well, I must be going now. I have to go along with my master to take a present to the Sun God Re.

The class spent a great deal of time studying the arts of the ancient Egyptians and these, in turn, furnished leads to all aspects of the culture. Committee work dealt largely with concepts usually learned in social studies activities but there was a continuous interaction of all curriculum areas in the total learning experience. The study of ancient Egypt stimulated a search in biblical literature for accounts of life at that time. This led to a brief study of Israel and the bondage of the Hebrews. The class profited from consultation with a Jewish student in the affiliated college.

DISCOVERING GREEK FORM AND RHYTHM

Following the study of ancient Egypt, the quest for knowledge concerning the development of western civilization naturally led the boys and girls into a unit on Ancient Greece. During this unit the boys and girls discovered the unique regard that the Greeks had for form and rhythm in all arts as well as their love of the beauty and grace of the body. This in turn led to an understanding of the excellent program which the Greeks had for physical development of the body.

The tendency of the Greeks to make the human body a central motif in their art particularly interested these 12-year-olds. Mrs. Johnson exploited this opportunity to introduce some sex education. She immediately called on the services of a physician and a girls' counselor to give honest, reliable sex education to the boys and the girls, respectively.

Greek drama and literature as well as architecture and sculpture received much attention, these categories becoming the departures for committee work. Several abler students intensified their study of geometry with the introduction of Euclid. The relationship of mathematics to symmetry in Greek architecture became a particularly vivid focus for these boys and girls, and their demonstrations helped most members of the class to understand the practical use of geometry in art. Experimenting with geometric figures stimulated several students to use these figures creatively in the area of art.

Much creative writing marked the period of the project on Greece. The following is an example.

A GREEK VASE BY JULIE LOUDON

Lisa sat looking at the beautiful vase her uncle had just sent her from Greece. It had a most unusual design around it. Men were holding their horses and they looked as though they had just come from a fair. The owners had bought the finest horses in the town!

Perhaps these Greek horsemen were leading their horses to the site of battle. Or maybe they were just parading them around to show them to a prospective buyer. Occasionally one of these high-spirited stallions reared, and the owner was stretching to recover control.

The history of Greece was here in this vase. If it could speak it would tell what life in Greece was like hundreds of years ago. It would tell of the lands and seas, the fertile valleys and the mountains that were the Greece of long ago. It might even reveal secrets of famous cities such as Athens and Sparta, the rivals of Greek history. Or it might tell about the neighboring peoples who eventually became part of the Greek world, or in turn, about the Greeks who fell to the power that was Rome. All history could be focused on just such a Greek vase as this!

Lisa was still thinking about the vase when her mother came in and told her to come to dinner. "Well," Lisa thought, as she hesitated, "it's been here hundreds of years, so it probably will be hundreds of years from now. A few minutes to eat dinner won't matter."

To enable the boys and girls to better appreciate modern Greek culture, Mrs. Johnson arranged for her Grade 7 to have lunch together at a well-known Greek restaurant in Chicago. It was indeed an experience for the boys and girls to order soulakia (lamb), and baklava (a dessert), and to taste Greek coffee.

In addition to understanding the Greeks of today by eating their food, the boys and girls were obligingly shown through a Greek Orthodox church by the priest who very carefully explained the Byzantine Art that was a part of the building as well as the ritual that made up the service. The following day a young Greek Ortho-

dox seminary student came to the classroom with the vestments of the priest to illustrate his use of these garments. Once again a humanities professor from the college associated with their school was called in to answer questions and stimulate inquiry into new areas of research.

During the very first days of their study of ancient Greece, the pupils developed an interest in the Greek language. One boy wore a shirt to class on which appeared the Greek words and symbols of *Alpha* and *Omega*. Fraternity and sorority names came in for much attention and study. The class wondered whether the ancient Greek language were still spoken in modern Greece. A Greek national was invited as a resource person. The boys and girls learned that modern Greek was similar to, but not the same as, ancient Greek. Some few pupils made an intensive study of the Greek language for their individual projects. They even learned how to write a few simple Greek phrases and sentences.

EXPLORATION IN THE ROMAN, MEDIEVAL, AND RENAISSANCE ERAS

Projects similar to those on Egypt and Greece were developed around Rome, the Middle Ages, and the Renaissance. Always the interrelation of the arts was the point of departure, furnishing leads to all other major areas of the curriculum. The art teacher, Mrs. Elise Letman, was particularly helpful with these and the two earlier projects. She helped plan field trips to art museums, cathedrals, and other community resources. She encouraged the boys and girls to express themselves creatively, and introduced new techniques and concepts as needs indicated.

The dance teacher acted as a consultant on dance and body movement in all projects. The history of dance forms was well developed throughout the studies.

During the study of the Renaissance the girls were asked to choose poems written by Shakespeare's contemporaries that they especially appreciated. These were discussed as a group, and one poem was then chosen by the girls as the best example of Elizabethan poetry. With the help of the dance teacher the girls were

stimulated to interpret this poem through the medium of the dance. A piano accompanist was later brought in to enrich this experience and to help establish the mood of the dance.

The theater, particularly the modern theater emerging out of the Renaissance, came in for much attention. The class went to see a local production of *Romanoff and Juliet*, and from this experience emerged new interests in the reading of the great dramas. The boys and girls decided to interpret two scenes from *Oedipus Rex*, which they did with unusual sensitivity and insight.

The humanities professor, a specialist on Renaissance art, helped the class to study the art forms and great artists of the period with keen interest. The following is a creative writing product of this phase of the study about the artist Raphael.

AWAKENING OF AN ARTIST BY ANN KIRKLAND

The day was one of vibrant color. The greens of the grass and trees made a rich background for the brilliant hues of the many birds and flowers. The sun, like a shining, golden gem in the blue sky was hanging over a distant mountain looking as though it were hesitant to drop out of view and give its kingdom to the moon to reign over for the night.

Yet this beauty was not seen by one small person who lay among the flowers on a hill, sobbing out his heart. A frail, dark-haired little boy he was. Too young to bear so heavy a burden of grief. After a time though, the weeping ceased and the boy lay very still. A bird in a nearby tree began to sing as though to comfort the little soul and the child raised his head.

"Oh, bird how happy you must be," said the boy aloud. "I too have been as joyful before. But it is so hard now that my mother has died. This is the first time I have cried. I could not cry when I saw her, so still, on the bed. It was as though I was not me. My heart felt like stone and had no feeling. I couldn't believe what my father told me and what my eyes saw. Now I know that she is never again to smile at me with her gentle eyes or hold me in her arms when I am lonely or unhappy." Slowly he rose and walked to a nearby tree and sat,

leaning against it. He still addressed the bird although it had flown away, "Oh, bird, my mother was so beautiful and loving. She was like the gentle Madonna must have been."

He sat staring for a long time at the sun which was grandly being drawn away by fiery clouds as if saying to the moon, "Go on and rule over this kingdom, but I shall go to the other end of the earth and show my splendor to other lands."

It was awhile before the boy really noticed this scene. Then as he did watch the sunset, nature's serenity began to soothe his troubled heart and gradually a great calmness came over him.

"When I grow up and become a painter like my father, I shall paint the sweetness of my mother into my paintings. In this way she will always be with me. That will be the feeling for which I will paint," he said thoughtfully to himself.

These were profound thoughts for a child. But perhaps the boy was given this gift of deep understanding to compensate for the fact that he was very young and really just beginning his life when she died.

He got up and made his way down the hill for it was dark now and great rain clouds had moved in suddenly from the west. The struggle within was over. As the cooling rain began to fall Raphael felt a deep sense of peace surge through his being.

The music teacher helped Mrs. Johnson and her class trace the development of music from primitive beginnings to the modern era. As with the other art forms, music was related, when possible, to the other arts and to historical and cultural developments.

The social science consultant from the faculty helped constantly to keep before the pupils the unity of social and cultural processes and was particularly helpful in tracing the development of Christianity through the Roman, Medieval, Renaissance, and Reformation periods. The influence of these periods on religious art and later the influence of the church on art was discussed. The use of art in early Bibles and the development of printing were studied in connection with the Reformation.

The pupils appeared highly motivated and interested in Mrs. Johnson's class and during field trips. They joined actively in a true quest. The problem-solving approach appeared to work well even

while exploring the past. However, the many manifestations of past accomplishments observed in the present, in museums and the like, and in the living culture of the present generation was significant in keeping interest high.

A LANGUAGE ARTS CLASS

Mr. Peter Giorgi teaches language arts to sections of Grade 7.² A typical class of Mr. Giorgi started under the direction of class officers, a practice formed into a routine from early in the school year. When all the students had arrived, a student, the class chairman for the week, rose from his seat, proceeded to the front of the classroom, and called for order. He asked the secretary to read the minutes of yesterday's class. The class listened attentively, offered comments and additions; also, they criticized the sentence structure and grammar of the minutes. Following the minutes, the class was formally turned over to Mr. Giorgi, as the secretary continued to note carefully the activities of the class.

Mr. Giorgi previously had written assignments for the day's work on the board. The students, for example, would do an exercise in the *Practical English Reading Workbook* together, work on Vocabulary Lesson No. 15 in their individual workbooks, and conclude with an exercise using the tachistoscopic attachment of the film strip projector. This was a full period's work, and Mr. Giorgi wasted no time. He did, however, remind the class that some members were falling behind in their book card activity. He took a 3×5 card from an envelope, read the book report written on it to the class, and commented briefly on the form and content.

Mr. Giorgi then nodded to the students in the first seat of each row, where workbooks and folders were stacked. These were quickly passed out and Mr. Giorgi introduced the story by telling the students the general nature of the selection, presenting difficult words they would encounter, preparing them for names which would appear in the story, and suggesting that they look for certain ideas. He then noted the time and gave the signal to begin. When

² Public Schools, Tucson, Arizona.

some students appeared to be nearing the end of the selection, Mr. Giorgi began writing the elapsed time on the board at 10-second intervals. As students completed the selection they noted, the number appearing on the board at the time. They then turned immediately to the back of the workbook and commenced working on a comprehension exercise, which they executed without reference to the story. As each in turn finished the quiz, he secured a copy of the answer key from the counter at the rear of the room and checked his own work, replacing the key for other students to use. He recorded his own quiz score and computed the number of words read per minute. Finally, he recorded this information on a graph in his reading folder.

As this was completed, each student proceeded individually to the next phase of the day's work, which might be, for instance, working on a vocabulary lesson taken from material read previously or, perhaps, working in an individual workbook. A variety of workbooks was used, and it was apparent that there were several groups in the class, organized on the basis of the students' ability. The students worked diligently, so it was clear that their group assignment was such that it demanded hard work, but also offered the possibility that the work would be successfully completed.

During this period of individual work Mr. Giorgi spent a few moments with each child, looking at his work, giving help, and making suggestions. At the beginning, Mr. Giorgi selected a child to work with the Reading Accelerator at a table at the front of the room, and another to secure the Reading-Span Trainer and work with it at his desk. These children had specific needs which these experiences could help meet. The other children in the class glanced only briefly at those selected; they were aware that such activities were purposeful and not games, rewards, or special privileges.

As the class period passed, Mr. Giorgi was able to see a large proportion of the students, either individually or in small groups. Near the end of the period he made the final adjustments on the filmstrip projector with its tachistoscopic attachment, which he had set up previously. Special answer sheets had been passed out with

workbooks and folders, and at Mr. Giorgi's command the individual work was stopped and the answer sheets were readied for class use.

The first five or six flash projections were for warm-up, and then five words were flashed while each student recorded his perception of the word on his answer sheet. The words were flashed again for the evaluation process, and individuals indicated their readiness to give their response aloud. The flashes were repeated, with increasing duration, until every student had made the correct perception.

Mr. Giorgi felt that this experience, repeated fairly frequently, not only resulted in improvement in perceptions of materials presented tachistoscopically, but that there was a transfer effect to the reading of printed material in books and periodicals. In fact, this transfer effect was discussed with the students. The tachistoscope experience had a high degree of interest value for the students.

Near the end of the class period booklets, workbooks, and papers were quickly collected, and returned to their storage places. Mr. Giorgi dismissed the class and as they left, he was already setting up materials for his next class.

A VARIETY OF LEARNING EXPERIENCES

1. Several things stand out in this class. First of all, the program is truly developmental; each student progresses, and he progresses at his own best rate. An important part of Mr. Giorgi's program included reading in the state adopted textbook, *Prose and Poetry Journeys*, in the main supplementary text, *Days of Adventure*, and in any of the assorted literature anthologies which range in complexity from the third-grade to high school level. Such work is self-directed in the main and, as described, self-evaluating. This reading was recorded on a chart by each student. Also, every two weeks a story was read in class which was the source of the vocabulary development lesson for the following two weeks; some students worked on one of these lessons, others progressed in their workbooks. The students proceeded at their own rate and checked their own work.

The children were divided into ability groups for some activities and worked as a class for others. On occasion the grouping was based upon interest as well. The grouping was purposeful and based upon criteria derived from many sources: standardized reading achievement tests, intelligence tests, diagnostic reading tests, vocabulary tests, informal teacher-made tests, and, as the work of the year progressed, accomplishment in the class work. Mr. Giorgi changed a student's placement as his work warranted it.

The students participated actively in directing the class. During the year each served as chairman and as secretary for at least one week. The class elected the students to these offices. In addition, each assumed a high degree of personal responsibility for his own work. This does not mean that Mr. Giorgi abdicated his responsibility as director of learning in the classroom. Quite to the contrary, he was an extremely demanding teacher, but his demands were realistic, gauged to the abilities of his students, and the probability of their achievement. The student's responsibility was, in part, that of planning and executing his work in order to comply with Mr. Giorgi's requirements.

Mr. Giorgi's emphasis was on each student as an individual, rather than on the class as a group. He recognized that if he attempted to work with the entire class at all times, he would be dealing with a fictional construct. He knew that in the development of any skill the teacher must start where the learner is and carry him as far as he can go. This requires much of the teacher, particularly in ascertaining where the student actually is and in estimating how rapidly he can move. In Mr. Giorgi's classes, this evaluation was formal and emphasized particularly at the beginning of the year, but also continued throughout the year.

Further, Mr. Giorgi used a variety of materials, methods, and procedures in his class. He was aware that repetition of the same procedure over and over again can dull the keenest mind. He realized that he could accomplish some things with one technique and some better with another. He recognized that reading is probably the most complex of the communication skills and is not really a single skill, but a whole configuration of skills.

EXTENSIVE READING

On any one day in Mr. Giorgi's class one would observe only a few of the activities which the children engaged in throughout the school year.

To learn to read, the learners must read, so a great quantity of reading material was presented in the room. In addition to the texts and anthologies mentioned in the first section of this chapter, Mr. Giorgi made available in the room eighteen current periodicals. These were on various comprehension levels, from the fourth-grade *Weekly Reader* to *Time*, and they included the usual school periodicals on the junior high school level.

One class period each week was spent in the school library or with the *Teen Age Books* monthly selection. The purchase of *Teen Age Books* publications was encouraged by Mr. Giorgi. Each child was given a copy of the monthly *TAB News*, and the merits of the books were discussed in class. In Mr. Giorgi's school, six seventh-grade reading classes purchased 1,033 books during the 1957-1958 school year, of which 135 were pocket dictionaries.

Twice a year, each class took a trip to the Teen Room of the Tucson Public Library, and each child secured a public library pending card. Too, several authors visited Mr. Giorgi's classes after the students had read these authors' books.

At the beginning of the year each student completed a Reading Questionnaire which gave Mr. Giorgi information about his reading experiences, interests, and attitudes. Mr. Giorgi used this questionnaire to guide the student's reading. Of course, he also used other criteria, such as ability and background. He required each student to complete a book card every six weeks describing and evaluating one of the books he had read.

MOTIVATION AND INTEREST

Mr. Giorgi held that experience and familiarity produce interest. In addition to the motivational devices described above, Mr. Giorgi had compiled an anthology of humorous, dramatic, and patriotic poetry which he felt was particularly suited to the inter-

ests of seventh-grade students. His opinion was that reading his anthology might well lead to further reading of poetry. He also had a collection of limericks, some of which were left incomplete for the students to supply the last lines.

Once a month Mr. Giorgi presented the monthly film *News Magazine of the Screen*, which included material of current, but significant, interest. The students prepared carefully for each viewing, and it was followed by a written exercise concerning the content of the film. Mr. Giorgi found that this film presentation led to further reading during the students' free time on the matter treated.

SKILL DEVELOPMENT

The greatest amount of Mr. Giorgi's time was devoted to skill development. For the first sessions of the class Mr. Giorgi prepared a comprehensive "Outline on Reading" for students which included discussions of the purpose and nature of reading and ways of improving competence. The students inserted this outline in their Vocabulary Notebook for reference throughout the year.

During the year the students executed many exercises designed to develop skill in reading. Skills of structural analysis were built by class exercises on syllabication and on roots, prefixes, and suffixes. Vocabulary development came in part through exercises on synonyms, antonyms, homonyms, and the acquisition of new words. The story and big vocabulary assignment occurring every two weeks has been mentioned already. Word meanings were extended by context exercises, interpretations of quotations, word definition exercises, and such special exercises as a three-page list of physical, mental, and personal characteristics which the students checked off to describe themselves. This last proved very useful to bilingual children.

Much time was devoted to dictionary skills. An entire unit was completed on dictionary skills, and subsequent to this the students used the dictionary extensively in carrying out other assignments. Similarly, skill in the use of the library was built early and then applied all through the year.

Mr. Giorgi believed that skill in oral reading should be developed, but that this was best done when the practice in oral reading was purposeful. Such oral reading gave the listeners information or entertainment which was unavailable to them by other means. The listeners reacted both to the content and the form. It was related to growth in listening skill. Phonetic pronunciation was studied and practiced in connection with oral reading.

Mr. Giorgi considered general comprehension a skill also. In addition to all the work described above, he assigned practice exercises in this skill. For example, in one exercise the students read a detailed report of the sequence of events in an accident, then they took a quiz as if they were witnesses being questioned by an attorney in court.

In addition to the exercises described here, Mr. Giorgi as part of his evaluation procedure gave frequent short quizzes in class of the material covered in the exercises.

It requires too much time for a teacher to prepare all the exercise material the students need. Consequently, Mr. Giorgi used workbooks and other commercial materials. As described, pupils used the *Practical English Reading Workbook*, and some worked in individual workbooks, at their own best rate of progress. These were chosen in relation to the students' needs and abilities from: the *Practice Readers* (four levels), *Diagnostic Workbooks* (four levels), and *Reading for Meaning* (six levels). Also in the room were the *SRA Reading Laboratory*, Dolch reading games, word wheels, and several mechanical aids for reading instruction.

EXPERIENCES RELATED TO READING

Mr. Giorgi was a language arts teacher, and he knew that reading skills are intimately related to other communication skills and that certain activities can result in greatly increased motivation for reading. The overhead projector was convenient for showing pictures as an introduction to, or a clarification of, stories. Printed material for group reading could also be projected.

Listening skills received Mr. Giorgi's attention. This was related to the oral reading program. On occasion Mr. Giorgi read an article to his students, from the *Reader's Digest*, for example, after preparing them for difficult vocabulary and ideas for which to listen. Afterward, the students took a quiz on the content, and also evaluated their listening.

Learning to listen with the speaker out of sight was accomplished by a simple arrangement constructed by Mr. Giorgi. Across the hall from his classroom was a teachers' room. There, he had placed a microphone, connected to an amplifier, from which a wire ran to the loudspeaker at the front of his classroom. Interest-group committees, having studied a topic, reported their findings to the group by a panel discussion held in the teachers' room and broadcast through the classroom speaker. Added motivation came from installing a temporary loudspeaker in an adjacent classroom where another class would also listen to the discussion. As a result of these experiences the class profited more than they otherwise would have from listening to the historical events vividly recorded in "I Can Hear It Now" which Mr. Giorgi had played for them. Plays, poems, and debates were also broadcast in the manner described, combining into one activity oral reading, speech training, and listening.

Finally, Mr. Giorgi believed that reading proficiency could be increased by an understanding of the structure of the English language. And, because handwriting is an important communication skill and relevant to the teaching of reading, Mr. Giorgi guided his students in improving theirs.

SUMMARY

Moving from the self-contained classroom of Mrs. Johnson's Grade 7 to the departmentalized Grade 7 of Mr. Giorgi, the student would find structural and even philosophical differences, but good teaching based on the same principles. Methods and techniques of instruction may be adjusted to the maturity of the students but the following principles are always basic: a guidance

point of view, motivation and maintenance of interest through a variety of activities and personal involvement on the part of students, respect for both the individuality of the learner and the importance of the task, and the creation of an emotional climate conducive to learning. These seventh-grade programs evidence these principles.

CHAPTER 15

Learning Experiences of 13-Year-Olds

During a severe afternoon thunderstorm on a late April week end, Richard had a close call with a lightning bolt. He and his fellow boy scouts were camping in a tall timber stand in the mountains. During the height of the storm, when all were huddled in their pup tents, lightning struck a pine tree in the center of their camp. It was the very tree to which Richard had tied the guy rope supporting the rear pole of his tent. Some of the electricity leaped along the wet rope and descended the rear tent pole with a shower of sparks. This, together with the tremendous thunderclap which followed, made a lasting impression on Richard and his buddy, Jim, even though neither was hurt. When the boys returned to school on the following Monday, a lively discussion broke forth in Mr. Kenneth Torgerson's science class.¹ Richard had asked, "What causes lightning?" Learning begins with such a question. The learning process in school or in the boy scout camp should be a quest, essentially a pursuit of problems significant to the children here and now, and a progressive development of insight into the nature of man and of the universe.

Teachers often think in terms of ultimate goals and objectives in a course of study. Children think mainly in terms of answers to their questions, asked or unasked. Richard wanted an answer to his question about lightning and its genesis in a thundercloud. Richard

¹ Doolen Junior High School, Tucson, Ariz.

was thinking in terms of a specific answer. He had not yet set up goals or objectives beyond and encompassing that specific answer. Whether he would depended chiefly upon Mr. Torgerson or perhaps one of the participants in the discussion. Mr. Torgerson suggested that the group might have to learn about several other factors in a thunderstorm before lightning could be understood. As a teacher, he was aware that the question could not be given adequate treatment until the problem area had been expanded to include an inquiry into the mysteries of the thunderstorm as a whole. Lightning is only a part of the whole phenomenon. It cannot be understood as a part. Understanding lightning awaits an inquiry into the role which it plays in the total weather pattern. Thus, Mr. Torgerson sought to lead the pupils toward investigation of all of the dynamics of a thunderstorm. Should they, he knew that the perception of Richard and of the others eventually would expand to include a rather complex group of weather factors, and, further, that an understanding or insight relative to lightning would come only after these factors had been brought into focus for the students.

A CLASS PROJECT ON WEATHER

Mr. Torgerson could have shut off the learning process quickly by giving Richard a one-sentence definition of lightning and asking him to remember the words. Mr. Torgerson knew, however, the value of pursuit in learning. Here was an interest in lightning that could lead to many significant learnings in his class. He knew, moreover, the value of working with the tide of the learner's motivation. Richard was not always conscious of achieving goals which Mr. Torgerson may have set for him. He really did not pause long enough to consider. To have done so would have thrown him off the track. He was exploring questions he had asked and he wanted to know the answers.

Richard's learning, which began with the bolt of lightning, continued at home and at school. By raising the question in his class on Monday morning, he stimulated considerable interest among his classmates, especially as he told of his vivid experience with light-

ning in the mountains. He interlarded his discussion with several rhetorical questions which began with, "Did you know that _____?" His new but, as yet, untested learnings gained on the mountain were thus shared with the group. This led to additional sharing of information in the group and, subsequently, to more unanswered questions. These promoted a class project on weather.

THE COMMITTEE ON THUNDERSTORMS

Richard's original question about lightning had now influenced directly the school curriculum. His interest and his study had been contagious. A whole class went off in hot pursuit. Richard became chairman of a committee on thunderstorms.

Mr. Torgerson continued to direct the discussion in Richard's committee by asking such questions as, "If one has to look into a whole storm to discover the secret of lightning from a thunder-cloud, what other forces might we find in the cloud? Do these relate to the ground or other clouds?"

Jim volunteered that there is water vapor or droplets in the clouds. Stephen said that there is wind in the cloud. Mark said hail, sometimes. George observed that dust particles must be in the cloud, taken there by the terrific up-drafts of warm air from the ground.

Mr. Torgerson broke in to point out that the winds in the cloud might need to be studied further. He asked, "If there is hot air in the cloud might there also be cold air?" Richard replied, "There must be cold air in the cloud because the wind which came with the rain in the afternoon was colder than the wind we had near noon." "Yes," said Jim, "This cold air must have come from the cloud; where else could it have come from?" Mr. Torgerson interjected, "George has suggested that there are up-drafts of warm air in the cloud. I suppose that most of you have learned from your previous science studies that warm air tends to rise, that it expands when heated and becomes lighter. What happens to air when it is cooled?" "It condenses, gets heavier, and settles toward the earth," replied George. "That proves it!" exclaimed Jim who was quick to see the relation between his theory about how the cold air at-

rived at their camp and George's generalization. "The cold air came down out of the cloud."

Mr. Torgerson pursued this line of reasoning, "If cold air and hot air come in contact with each other, what happens?" The students were quick to respond with their own versions of how the air currents in the thundercloud were characterized by up-drafts and down-drafts. They were quick to sense that cold air masses and warm air masses under certain conditions could produce tornadoes. After considerable discussion of air currents, Mr. Torgerson led the discussion to a consideration of how these air currents were related to rain, hail, snow, and lightning. The problem, having been expanded earlier to include the system or whole within which lightning was a part, now was becoming differentiated as the problem-solving process reached detailed analysis. Eventually, Richard achieved an insight into the "why" of lightning when the various factors operating to produce it came into focus for him. This insight was but one of many which Richard gained from his quest. Some of these insights led to further questions and therefore to other voyages of discovery.

Neither living nor learning can be switched off or on conveniently like the mechanical brain. Neither can be transferred to yesterday or pushed forward to tomorrow. Richard's question about lightning could not wait. Living and learning simply take place in the active present. Richard had had a vivid experience but lacked insights with which to interpret that experience.

Whether experiences were direct or vicarious, he profited from them because of his needs and purposes. He eagerly used books on weather, weather maps, drawings of clouds and air currents, various instruments for measuring and reading air pressure and humidity. He made many materials and instruments for his own use or to show others what he had learned. He discussed and listened. He read and observed. He imagined, thought, recreated, drew together, and generalized. He did all of these things and more, not because someone forced him, but because the force was inner and personal.

He learned much from books, from interviews, from maps, from

the discussions of his classmates, etc., and he learned effectively from these various second-hand sources because he had had sufficient first-hand experiences to make the vicarious ones meaningful. The fact that fundamental learning which involves new generalizations or insights is often critically related to direct concrete experience was particularly true of Richard's learning.

THE COMMITTEE ON CAUSES OF WEATHER²

The committee on causes of weather decided to review basic data about seasonal changes before going deeply into the causes of weather. Mary Jane had been asked to review this information and present it to the committee.

"First, I would like to show you why winter is cold and summer is hot. I will use the globe and this lamp," began Mary Jane. "While our planet spins around on its own axis, it also circles the sun. Every round trip takes a year. Since the earth's axis is tilted, first one hemisphere and then the other leans toward the sun. See now when our northern half of the earth is tilted toward the sun, we have summer." Now Mary Jane walked around to the other side of the desk. "Oh," commented Michael, "when the northern half of the earth leans away from the sun our days are short." "That's right," agreed Mary Jane. "Anyone can walk around the light now and see for himself."

"That was very nice, Mary Jane," Mr. Torgeson congratulated her. "Let me ask you about this. Can you think of any other reason why the summer days are so much hotter than winter days besides the fact that they are longer?"

"I know," said John. "In a book I was reading this morning it showed that in summer the sunlight was more direct, like a straight line, while in the winter it was slanted."

"Oh, I can see that!" said Mary Jane.

"Would you show the others with the globe and the light?" Mr. Torgeson suggested. Mary Jane agreed, "All right. See how the

² The author is indebted to Arthur Munoz, Margaret Trachten, Margaret Read, Don Schoon, Philip Alsworth, and Helen Dick for help in writing the section describing the experiences of the committees on causes of weather, weather forecasting, and weather records.

light is shining brightly on that part of the globe that is tilted toward the sun? The lower part is almost in shadow."

Mr. Torgerson moved on to another subgroup talking about an experiment.

"How are you coming along? Let's see, you decided you would show us about clouds."

"Oh, yes," said John, "I wanted to ask you something. Is it all right if we do this experiment to show the class what a cloud is?"

Mr. Torgerson read the page in the book which John had spread out in front of him. "That really does explain cloud formation clearly, John. Why don't you go down to the cafeteria and get a milk bottle and put some water in it like the book says and we'll try it first to see if it works."

While the committee was waiting for John to return, Mr. Torgerson got a box of matches out of his desk drawer. Presently, John came in with the bottle. "Now you read the directions to us, Cathy, please," John said, as he stood holding the bottle.

Cathy started, "Wet the inside of a clean milk bottle with warm water."

"Yes, we already did that. Go on," urged Johnny.

"Drop a lighted match into the bottle."

"Oh," said Johnny, "where will we get the match?"

"Here, John, I have some," Mr. Torgerson said, giving him the box. He opened it and took one out. Jimmy reminded Johnny of previously learned safety rules. "Don't forget to close the box, John," he said. "Oh, that's right," John said as he closed the box. He lit the match and dropped it into the bottle.

"Why, it went out," Cathy said.

"Sure, don't you remember, there isn't enough air in it to burn, or for combustion," John replied.

"Why did we put the match in? What does that have to do with making the cloud?" protested Jimmy.

"It says here in the book," said Cathy, "that the match goes out immediately, but leaves a dense trail of smoke. The smoke supplies specks around which the moisture can condense."

"Oh, yes, I can see the smoke," said Johnny.

"Now," Cathy continued reading, "stand with your back toward the light so you can see what happens. Suck the air out of the bottle and a cloud forms inside."

"Yes, it does," said Johnny, "See!"

"I wonder why that is," said Cathy.

"Well, students," said Mr. Torgerson, "It looks as if you have a lot of reading and information to get if you're to be able to answer the class's questions. You can start with the science books on the side table and if you need any more, I will be glad to help you a little more later on," he said, as he moved on to the next committee.

THE COMMITTEE ON WEATHER FORECASTING

The committee which was to find out about weather forecasting wanted unanimously to have Mr. Paul Plunkett, a local television weather forecaster, visit the class and give a talk on how to forecast weather.

After further committee discussion, it was agreed that they should write a letter to Mr. Plunkett inviting him to give a talk to the class. Mary Kay then asked how this letter should be worded, and it was apparent to the committee that they needed a review of letter writing skills. Mr. Torgerson launched the committee upon the study of letter construction. Each child wrote one or two drafts, with the teacher making the proper corrections until a suitable one was selected to be mailed.

Larry then asked what questions they should ask Mr. Plunkett. Each pupil was to write down what he or she considered to be good questions—pertinent to what the committee was working on. Here are two samples of questions listed: Where do you obtain your weather information? Are weather reports reliable? Before Mr. Plunkett's visit, Mr. Torgerson suggested that this might be a good time to review the rules for good listeners as well as those for common courtesy.

During Paul Plunkett's visit the children asked him whether he had any written materials which he could make available to the class. He presented the class with a number of pamphlets. These provided another source of information for the committees. Also

the children asked him to comment on the daily weather chart which they had started. He offered them some suggestions on making the symbols, and complimented them on their neat work.

The committee voted to have Bruce call and thank Mr. Plunkett for his most interesting talk and suggestions.

When the children found out from Paul Plunkett that he relied on the Weather Bureau for much of his information, Larry wondered if his committee could visit the weather station at the airport to see how they gather their information. In talking to Mr. Plunkett, they realized that they might be able to do some forecasting themselves, and Alice suggested that they could find out how to read a weather map. Alice had clipped the weather report from the morning paper. Jack wondered how the Weather Bureau received the information from other cities. Fay said that when they lived in Washington, D.C., she could dial a telephone number and get a recorded weather forecast. Larry volunteered to call the Weather Bureau to see if he could arrange a visit. This was an opportunity to discuss telephone manners, how to introduce oneself, and to briefly and clearly state one's business. The committee then discussed what they wanted to learn at the Weather Bureau if the trip could be arranged.

At this point, Mr. Torgerson suggested that this might be a worth-while trip for the whole class, and the committee invited the other committees to share this experience with them. All committees consulted their lists of questions to see which ones could be answered at the Weather Bureau. They decided upon the questions to ask and suggested that each take a notebook and pencil for note taking. Alice said that her father who is an aviator told her that the weather map is printed as it comes over a sort of teletype machine and she wanted to see that. When they arrived at their destination, the boys and girls were given an opportunity to look about and to ask questions. The purpose of the trip was constantly kept in mind, and the children's attention focused on the things that would answer their questions. They found out what the weather symbols on the chart mean and decided that they could use the same symbols on their own map. They learned how to read

a barometer and found out why a barometer is important in forecasting. In fact, they were surprised to find out that they could make simplified versions of most of these instruments.

They watched a weather balloon being sent aloft and heard how it radioed information back to the station. Later they secured one of these balloons for their own classroom, the better to analyze its operations.

By the time their visit was over, the children had learned how weather is forecast, and they decided that they could reproduce many of the activities of the weather station in their own classroom.

The children were sufficiently well prepared for the trip so as to ensure desirable behavior. Each child had certain questions he wanted answered, and he was responsible for taking notes so that he could share what he had learned.

In following up the trip in the next committee meeting, the children were given an opportunity to freely express their reactions and comments. Then the original questions were checked to determine how many could be answered from the new information learned on the trip. A chart was made to record the most important learnings gained from the trip in order to emphasize the most valuable ideas. The information gathered was then used in planning what activities the children could carry out in their classroom and at home.

They had learned how to read a weather map and had added to their vocabularies such words as meteorologist, Fahrenheit, occluded front, cold front, warm front, stationary front, isobars, high and low pressure areas, and anemometer. Alice volunteered to clip the weather map out of the morning paper and bring it to school every day. But they all agreed that daily weather maps are not up-to-the-minute and that they cover general conditions for large areas of the country. So they concluded they really needed their own weather station. The aerologist had given them some ideas of things they could make and their reference material had lots of different suggestions. So they made a list of the different kinds of

information that would be most useful, and how they could get that information from equipment they could build. The list included: wet and dry bulb hygrometer, rain gauge, anemometer, wind vane, barometer, cloud direction indicator, and air movement indicator. These could all be made from simple materials available at home, in school, and in the corner drugstore.

The committee spent the next two or three days assembling and constructing the instruments for their weather station. When each was completed the person who made it set up a chart or a notebook for daily weather observations, which he transferred to a large weather chart. When their daily observations were complete, the committee as a group verified and interpreted their data and arrived at their daily weather forecast, which they took turns posting on the bulletin board each day.

When their forecast proved to be wrong, they inquired into the reason why. In this way they learned from their own experience why professional forecasters are not always accurate.

THE COMMITTEE ON WEATHER RECORDS

In the group working on weather instruments there had been the problem of "just how shall we present our findings to the class?" Sue suggested a list of the temperatures for the past three weeks which she had been recording. Bill, who was interested in arithmetic, mentioned that he had seen some pictures with bars on them and others with lines which showed the number of sales made by salesmen with whom his father works. Could this be used to show the different temperatures?" he asked. Here the teacher stepped in to capitalize on the opportunity to teach bar and line graphs. Some suggestions were made to look in the arithmetic book to see if the group could find out if and how Bill's idea might really work. The necessity for neatness and accuracy were emphasized. The teacher then suggested to Bill that he should try to learn as much as he could about the construction of graphs and how to interpret them so that he would be able to explain the charts to the class.

Getting back to Bob's interest in new words, the teacher asked him to see if there were any other new words in the arithmetic book in the material on graphs that might be useful also. Bob searched the arithmetic book for new words, and by reading it also learned about graphs; but he had been activated by a different appeal than Bill, who would have studied about graphs just because they were in his favorite textbook.

But what about Betty? Her favorite activity was art work. How was she encouraged to study graphs? The teacher suggested she look in the text to see how the graphs were made and encouraged her to try to make her graphs of temperatures as attractive as possible by using good color combinations and appropriate captions. Several days later Betty came up with this idea: "I saw several line graphs with more than one line on each. Couldn't we take the temperature several times a day—say, in the morning before school, at noon, and after school and show this on a line graph with three different colored lines?" The teacher overheard this and interrupted: "I think your idea is good, so why don't you make a graph with the three lines and we'll post it on the main bulletin board for our school. Then we will all be able to check the temperatures every day." The private thought behind this is, "Good. Now I've found a way to keep them interested in continuing their learning about weather even after we start on something new in class. It will also help cement their understanding about graphs." Doubtless, Betty's artistic graphs would arouse questions from the other students in other rooms also.

The committee also decided to draw a large map of the United States. Johnny said, "Then we can print the names of various states and cities on it, and each day we will put tags on the board showing high and low temperatures at each city." "Yes," Anne added, "we will also show with different colored pencils where it is snowing and raining. We can do this by checking the weather map clipped from the morning paper." Through this project the children could see how temperatures vary over the United States. Jim

to find independently the information they needed and were able to distinguish between reliable and unreliable sources of information.

When periodicals were available, the students were encouraged to use them. Mr. Torgerson provided mimeographed lists giving the names and issues of periodicals and the titles of books useful as source material. Johnny is an above average student and came to Mr. Torgerson for suggestions for outside reading in connection with his committee work. Mr. Torgerson guided him in the use of the *Reader's Guide to Periodical Literature* and encouraged him to share with the others those things which he found to be of particular interest and which provided further insight into the answers for the common question. In this sharing experience Johnny made use of his reading skills—scanning, outlining, etc.—and of his writing and speaking skills. Though the entire class had had prior instruction in these skills, Mr. Torgerson decided to bring the whole class together again for further work on these skills.

Each Friday all committees reported on the week's activities to the entire class. This gave the class the opportunity to reevaluate its plans and goals. This was a learning opportunity for the whole class, not only in the use of communication skills but also to promote skills in organizing material and in critical thinking. Each student was encouraged to relate his committee's work to the contribution of each committee member and all other committees and to determine values in reference to the common goals. This self-evaluation procedure may well be one of the most important skills that the students learn throughout their entire school experience; therefore it should never be neglected by the teacher.

The students were proud of the results of their work and together decided to invite other eighth graders to share in their learning experiences. Considerable art work had been done, from the making of scrapbooks by individuals on such subjects as "Unusual Weather Phenomena" to a whole committee executing a mural on cloud formations. These and the many permanent weather instru-

ments and the charts and graphs were proudly displayed. The students planned a simulated television program to entertain their guests.

SUMMARY

From Richard's specific experience with lightning, his learning grew in several directions. His study of air movements in thunderclouds led to a study of air movements in particular types of clouds, and from there to a study of air movements in polar fronts and warm fronts. A study of air currents in the cloud led to an understanding that a gigantic amount of static electricity is generated by these air currents as they create friction with billions of dust particles and water droplets in the cloud; this led to study of other ways in which electricity is generated. He broadened his knowledge of the water cycle, heat radiation, air pressure and other properties of the atmosphere. Many other questions arose in the pursuit of the original problem; many other answers had to be found including how storms affect air travel.

In the pursuit of such self-selected problems, moreover, he and his fellow students acquired new skills in arithmetic, reading, spelling, writing, and composition. For many pupils in the class there were great strides in skill development in response to an obvious need in the tasks selected. They learned many new concepts in history, physics, geography, and a host of subject fields. These concepts and skills were eagerly learned by the pupils when they saw that such learnings were essential to completion of tasks which they had selected.

...PART III

IMPROVING THE CURRICULUM

INTRODUCTION

The changes which twentieth-century men are called upon to face seem illimitable. As America moves into the challenging space age, the changes demanded by man's present quandary are primarily educational. If education at all age levels and through all media—schools, television, radio, motion pictures, churches—cannot rise to the occasion, civilization and perhaps even human life may be marked for oblivion. Perhaps the world is a generation beyond the time when the chief aim of education was to supply the mathematicians and scientists to build cataclysmic weapons. The existence of several types of such weapons of universal destruction today is the painful fact which has brought the world to its most critical crisis.

While education has ably assisted industry and government to create the scientific and technological giant which is our defense establishment, it has been much less effective in developing men with the knowledge and behaviors which could turn present technology into a full-time servant rather than an almighty tyrant. All thinking men know what the choice must be for our world home.

Education under fire of a bewildered and troubled world has given rise to more intensive scrutiny by citizens throughout the nation of the schooling process. Some constructive analyses are in process. Fear has driven others to hysterical and largely unjustified criticism of schools. Public education and teacher education have been cast in the role of scapegoats to a degree unparalleled in the history of education. Most people realize that American schools are for the most part what the people want them to be. Often when teachers and administrators have tried to produce effective reform, they have run into unreasoning prejudice and resistance by an uninformed public. Education would not be such a problem today if teachers were allowed to keep educational practices rea-

sonably current with the developing scientific knowledge about children and the learning process. Nor would it be such a problem today if teachers and administrators were free to try procedures which could actualize in the behavior of American children the hopes for a democratic way of life as expressed in our greatest literature and statesmanship for over a century. Since education is "everybody's business," too many selfish or prejudiced groups have joined to prevent effective reform, either in the application of research findings or in developing an educational process consistent with the goals of democracy.

The behavioral sciences have validated the democratic way of living for maximum creativity and mental health. The public has a right to know such research findings, and no one is in a better position to inform the citizenry than administrators and teachers. Mutual trust would greatly improve communication. Newspapers and other mass media have an obligation to see that their readers do not develop misconceptions through the process of so-called "objective" reporting.

American education finds itself laboring under a philosophy and a rationale for learning still essentially autocratic and authoritarian, enslaving America's children in a dangerous immaturity. This volume is frank in its advocacy of curriculum design equal to the task of education in the space age. This design is not an original conception. It has been advocated by leading thinkers for over half a century, and its roots go back to the teachings of Socrates and Jesus.

Many professional and lay people are aware that improvement in the curriculum of the American school is essential if the traditional ideals of the nation are to be reflected in the behavior of the products of the school. Awareness is not enough. Administrators, supervisors, teachers, and parents must find a way to work together to provide a curriculum operationally in tune with the value system of the culture. Before citizens and school personnel can deal effectively with this complex problem, probably they will have to build a better understanding of the role which education plays in the culture. They will have to realize that the truly im-

portant changes will have to develop in people themselves. They will have to plan the process of curriculum change so as to harmonize with the newly oriented curriculum goal itself.

The chapters in Part III are directed primarily to in-service personnel of the schools. A prospective teacher would lack orientation to the teaching profession, however, if he did not attempt to familiarize himself with the problems and techniques of curriculum improvement.

portant changes will have to develop in people themselves. They will have to plan the process of curriculum change so as to harmonize with the newly oriented curriculum goal itself.

The chapters in Part III are directed primarily to in-service personnel of the schools. A prospective teacher would lack orientation to the teaching profession, however, if he did not attempt to familiarize himself with the problems and techniques of curriculum improvement.

CHAPTER 16

Curriculum Change as an Aspect of Cultural Change

THE NEED FOR CURRICULUM CHANGE

America may look back upon a half-century of tentative changes, experimentation, reaction, and retrenchment in its far-flung system of public education. In contrast, tremendous and irreversible changes have taken place in the culture during the same period. These changes in the culture are not merely continuing; they are accelerating. By their very nature, these cultural changes are making education more of a problem every day. Thus, education has become one of the chief manifestations of cultural lag in this century. In no area of human endeavor is there greater danger of cultivating superficial and conventional habits than in teaching. Culturally speaking, this *crystallization* is common historically, exemplified in any practice or institution that has become fixed and habitual and remains so in the face of change beyond its usefulness, and thus exhibits cultural lag. Crystallization in a changing world like that of the twentieth century can be costly and even disastrous. Today's educational system undoubtedly is characterized by much crystallization, and since education has become so important to the survival of mankind and its institutions, this cultural lag represents a peril.

THE INTERACTION OF THE CURRICULUM AND THE CULTURE

Ideally, education is immediately interactive with the culture. It cannot be unaffected by the continuous process of change going

on in the culture. The role of education in the culture is not restricted to initiate the young into the mores of the older social group. It participates in the broader process of cultural rebirth—rebirth frequently marked by mutation.¹ To the extent that education touches every age group, all members of the society may be participating simultaneously in this process of rebirth. Cultural rebirth and mutation take place whenever there is learning, problem-solving, reconstruction of experience, socialization, and creativity. All of these are characteristic of the democratic problem-solving curriculum. In such a curriculum design, the prime, interactive relationship of curriculum change and cultural change are built in.

In an era of tremendous cultural change, the interactive relationship of culture and the curriculum unfortunately has not been achieved successfully in all areas. Apparently, America has never developed a truly American curriculum in harmony with the other dynamic aspects of life in the New World. It has been a slave of tradition and pseudo values in an era when the culture and the society have been achieving history's most dynamic growth. In 1926, Harold Rugg made the dramatic statement that: "Not once in a century and a half of national history has the curriculum of the school caught up with the dynamic content of American life."²

Rapid, accelerating, bewildering, uncontrolled change is even more characteristic of today than of 1926. With the rapid expansion of the schools to admit all the children of all the people, education was pictured in 1938 as lacking the courage of decision by Lloyd Cook, who added: "It is said to lack direction and effectiveness. . . . Education, once so patently the solution for all of our social problems, has itself become a major problem."³ The schools appeared, further, to have lost their way in the strange new world of technological progress, swelling population, fast communica-

¹ Theodore Brameld, *Philosophies of Education in Cultural Perspective*, New York, Dryden Press, Inc., 1935, p. 388.

² Harold Rugg, *Curriculum Making: Past and Present*, Part I, Bloomington, Ill., Public School Publishing Co., 1926, p. 3.

³ Lloyd Allen Cook, *Community Backgrounds of Education*, New York, McGraw-Hill Book Co., 1938, pp. 1-2.

tion, urban-suburban trends, heterogeneous ethnic groups, and extremes of individual mobility.

In 1946, Alice Miel observed that in spite of tremendous efforts toward curriculum improvement during the previous two decades, it was rather generally agreed that very little fundamental change had taken place in the curriculum during a time of rapid and drastic change in the cultural field surrounding the school.⁴ More than a decade later, the curriculum of the typical American school does not now reflect, nor is it making much progress toward catching up with, the dynamic forces of our national life.

THE CHALLENGE FOR AMERICAN EDUCATION

Chief among the challenges for American education are demands for a greater emphasis on the development of a new generation (1) far more psychologically mature than the present one, (2) with democracy entrenched in its value system and in its behavior, (3) knowing and understanding more than its predecessors, and (4) equipped with the attitudes and skills of the scientific method in order that it may meet the unknown and even unimaginable problems of its tomorrow.

Although some progress has been made in a few schools toward the development of curricula which can help pupils achieve these ends, harsh realities must force educators and the public to the conclusion that the typical school curriculum has changed little, perhaps because of faulty insight, neglected opportunities, or fear of public reprisal. Numerous sincere attempts at curriculum development programs in recent years which yielded only paper changes present a rather sad picture. The regular failure of such course-of-study rewriting or memo-writing projects to produce anything other than superficial results has doomed this type of program to a deserved oblivion.

Course-of-study rewriting and other paper changes have little significance in the task ahead. The changes must be made in people, in their personalities and in their ways of doing things.

⁴ Alice Miel, *Changing the Curriculum*, New York, Appleton-Century-Crofts, Inc., 1946, p. 11.

Changes in the personalities of professional school personnel should include new insights into the significance of curriculum process, new attitudes toward learners and the role of the teacher, and a higher level of personal maturity. Attitudes toward doing, however, are even more significant. It is important that teachers and administrators demonstrate their willingness to experiment with process, to change their ways of doing things on the job. In this case, experiencing is the only effective teacher. Coöperative effort and team-play will offer security, critical analysis, and evaluation.

Thus, the teaching profession has had thrust upon it a tremendous responsibility. Even though it has not always been backed, or even usually, by a large segment of the public in its attempts to establish a curriculum consistent with educational research and the changing culture, the profession has no choice but to face up to the present challenge. Far too much is at stake, both for the profession and for the future of America.

Concepts presented in the following pages of this chapter should be carefully evaluated by professional personnel at all levels for their value in orienting the whole profession toward the task which lies before it. The concepts of (1) culture and its dynamic components, (2) how cultural change takes place, (3) how this basic process is related to curriculum change, and (4) how the American social crisis and its educational crisis are different aspects of the same condition—all are analyzed for those responsible for curriculum development.

THE NATURE OF CULTURAL CHANGE

CULTURE AND ITS COMPONENTS

Culture is everything created by the hand or by the mind of man. It is both the material and nonmaterial. It is the ways of behaving and ways of thinking. It is products. It is the machine that makes them. It is technological data that gives rise to the machine. It is human thought that develops the technology. It is

the value system which determines how man shall use his creation. It is the totality of everything man-made.

While the natural environment may contribute to cultural change, it is outside the structure of culture; its effect on change is governed by the principle by which any outside factor affects change. The most useful division of culture into components appears in that of Sorokin:

1. The *ideological* component—all meanings, values, tested thought, mores, and norms.
2. The *behavioral* component—all actions, reactions, interactions or behavior of the human agents.
3. The *material* component—all machines, all nonhuman vehicles, materials, energies and concrete tools.⁵

These are integral components of the whole and are insignificant as mere parts because of their relative and dynamic interaction with the whole. This is an organic concept of culture which assigns no meaning to any of the components in isolation. Components, therefore, take on meaning only in relation to the other components and to the whole culture.

Society is the behavioral component, the human agents and their interactions. Human behavior can be observed only in present relationships which cannot stand still, and that behavior is so bound up causally with the other components of culture, the terms *society* and *social change* cannot be wrenched out of the behavioral component, or *field*, even for purposes of study. If society is to be changed or directed, the social architect may select any component of the culture to precipitate change. Since the components are interrelated causally, a change in one will mean ultimately a change in all. Thus, society does not operate without a value system and a material culture. Social change, then, is an aspect of a larger cultural change. If the educator wants to change people in order to change the curriculum, he must understand the *field* or component nature of cultural change.

⁵ Pitirim A. Sorokin, *Society, Culture, and Personality*, New York, Harper & Bros., 1947, pp. 41-42.

When one of the components of culture undergoes change, whether precipitated from within or from without, there may be a lapse of time before corresponding changes take place in the other components. If so, a cultural lag appears. This lag creates a maladjustment in the whole—a disequilibrium or tension—which demands resolution according to the law of *closure*. When the social scientist or educator can determine which of the components is involved in the lag, efforts should be concentrated upon that particular component to remove the disharmonious elements which apparently are preventing change. The relationship among components will be dynamic unless crystallization has taken place within one or more of them which prevents a natural interaction. *Crystallization* is the formation of a set pattern or habitual response arising from the cultural lag which no longer yields to creativity or new thought.

What does the term *dynamics* mean? Dynamics refers to the relative forces or factors in a system, as, for example, the components of the culture. In a dynamic theory such forces never reach a perfect equilibrium; thus, change tends to be constant and continuous. Change may be controlled, slowed, accelerated, or channeled by manipulating its dynamics but never stopped. Inevitably any social system changes as long as it continues to function.

The possibility of channeling change lies in utilizing a precipitant situation, that is, a perceived need or problem as the entering wedge. Social change apparently is most likely to take place when tensions arise in the culture. Thinking undoubtedly is indispensable to this process. Indeed, social change is not unlike learning. In modern American society, the tensions are many and deep because of the conflicting interests of groups who want to control the tremendous technological or material culture. Under an uncertain national ideology, the conflicting parties tend to use belligerence rather than mutual deliberation. Communication breaks down and understanding is underdeveloped. The situation presented is not unlike an unorganized group of children whose home values differ greatly and who, lacking a common goal or set of standards which could be developed under the guidance of

the school, resort to a jungle behavior. The strong of the moment win out over the weak. Prejudice is substituted for empathy. Materials become concentrated in the hands of a few. Group solidarity breaks down. Real suffering comes to some. Relief can come only when the group, usually as a result of some outside stimulus, adopts a common aim and sets up machinery for deliberation and evaluation, for division of labor and sharing. Again, the role of a common ideology and an organization of behaviors in relation to it is the critical requirement. The teacher, the curriculum specialist, the statesman, all share in this knowledge of how social change must be motivated.

The development or growing process of culture is effected by the continuous creative interaction of internal as well as external forces when precise methods for resolving differences in society have been set up. The appeal to reason is not automatic. It requires a framework by methodology as well as a set of principles. When present, these make the whole process of social change as simple as learning.

The culture, so organized, will act constantly to preserve its unity by conditioning its internal parts and by resisting external factors which threaten this unity. The whole maintains its unity even throughout the process of adding and discarding nonessential or nonpatterned elements. Any change in a major component, however, changes the whole. Thus, while the precipitant which upsets equilibrium may come from inside or outside the culture, only a change in the value system would result in the culture's facing in a new direction.

Any institution of the culture has the three major components, either one of which can be marked for change by selecting the appropriate precipitant. The community, the family, the school, the church, the corporation, the government, or any other system, all have ideological, behavioral, and material components. A change either in the material setting or tools, in the human agents or their ways of interacting, or in the creed, the knowledge, or the ways of thinking will produce modification in the quality and the function of the whole system.

TECHNOLOGY AND CULTURAL CHANGE

Ogburn⁶ maintains that the material culture tends to grow faster than the nonmaterial. This creates a lag in the nonmaterial culture. This lag of the social aspects of culture appears to be the usual aftermath of mechanical invention or discovery. Some mechanical inventions may effect immediate social changes and the combined effect of the two may cause a rupture in the culture as a whole.

The new elements of culture are added by invention, discovery, and diffusion. If an element is not invented or discovered within a culture, it may be borrowed from without. Diffusion refers to this borrowing process. All cultures are great borrowers. The nonmaterial culture is not borrowed so readily as the material, and when the former is borrowed, it usually undergoes substantial modification before fitting into the new culture pattern. Every invention is the result of an evolutionary process. Very few inventions are lost because of the bequeathment of the heritage from one generation to another, education, written records, and tangible products. Therefore culture accumulates, too. Inventions tend to increase very much as the number of ancestors increase for each succeeding generation. As the base of accumulating inventions grows larger, more and better inventions are made probable. This causes an acceleration of cultural change. For these reasons, Ogburn saw no limit to the speed of change in the future barring a catastrophe of gigantic proportions which would destroy a great body of the accumulated inventions of mankind.⁷

Changes in technology cause variations in institutions and customs. Women began to drive automobiles in great numbers after the invention of the self-starter. This change caused changes in the habits of women regarding mobility, home life, care of children, vacationing and use of hotels. Important inventions are

⁶ William F. Ogburn, *Social Change*, New York, B. W. Huebsch, Inc., 1922, pp. 200-201.

⁷ William F. Ogburn and Meyer F. Ninkoff, *Sociology*, 2nd ed., New York, Houghton Mifflin Co., 1930, pp. 350-351.

seldom limited to a single social effect. Ogburn maintains that the effects of an invention like the radio are multiple and spread out like the spokes of a wheel. He lists no less than one hundred and fifty such social effects from the invention of the radio.⁸

The Primacy of Society or Technology?

While Ogburn would explain social change primarily by the advancing technological culture, MacIver would consider society or human interaction as primary. The social process gives rise to products, machines, and technology. The structure of society consists of present relationships whose equilibrium is constantly changing. Cultural change emerges from social change and enters the history of civilization at a later time.⁹ Further, social structures or relationships are not like artifacts which may be placed in a museum to be observed and saved from deterioration. Social phenomena are historical in the sense that they continue. Society is a becoming. It is a process and not a product.

Even if human nature did not change, the conditions under which it expresses itself are constantly changing. The environment of man changes, partly because of forces with which he can do little or nothing, and partly because of the designs of men. Every change in the relationship of man to his environment means in turn some change in his relationship to his fellows. Instability and change are, therefore, inherent in human society. Since nothing is independent of the universe about it, the process involves interaction and adaptation with the larger environment. Thus, the process of social evolution is a dynamic continuous interaction of all factors of human existence. It is sharply distinguished from the concept of progress. It may have its ups and its downs, its backward as well as its forward movements in terms of some scale, but all this is considered quite irrelevant. Rise and decay of systems is to be explained by man's dynamic assessments and the conjunction of social forces. The group, by its choices of alternatives

⁸ *Ibid.*, pp. 847-853.

⁹ Robert M. MacIver, *Society*, New York, Rinehart & Co., 1937, p. 395.

within the total matrix of forces and factors, determines its own rise or decay.¹⁰

THE FIELD NATURE OF CULTURAL CHANGE

The confusion of the role of technology in cultural evolution is cleared, thinks Sorokin,¹¹ by realizing that it is the body of tested thought in science and not machines themselves which really explains technical progress. A backward nation may import machines from this country but be longsuffering in its attempt to use them until the know-how also is imported or developed. The technological inventions are only vehicles. Most cultural relationships are configurative with meaningful, causal relationships with other parts of the culture. Yet, it must be recognized, thinks Sorokin, that some relationships are chance relationships between nonpatterned factors. These latter make for the sometimes gross and imperfect configurations of social phenomena. True meaningful-causal relationships are more typical, however, and furnish the basis for most organization in social situations. Man can gain control of these situations by understanding and shaping the meanings, the behaviors, and the materials which structure them.¹²

No idea can stand still. It is subject to change as it is pondered over by human beings. Values contain in themselves many implications and, sometimes, hidden contradictions. These many possibilities and potentialities cannot be fully grasped at any given time, but become explicit as the process of human contemplation unfolds.¹³ The more universal or general the idea, the deeper are its hidden implications. Some systems of meanings do not become objectified fully, lacking proper human or material vehicles. Failures may occur due to immaturity of the concept, the lack of

¹⁰ *Ibid.*, pp. 409-415.

¹¹ Pitirim A. Sorokin, *Contemporary Sociological Theories*, New York, Harper & Bros., 1928, pp. 744-745.

¹² Pitirim A. Sorokin, *Society, Culture, and Personality*, New York, Harper & Bros., 1947, pp. 41-42.

¹³ *Ibid.*, pp. 380-381.

sufficient technical skill, the lack of prime existence of all its components, or the hostility of other systems.¹⁴

Any on-going system changes inevitably as long as it continues to function. Functioning cultural systems have this inherent property of change. The probability of their change is increased by the social milieu which consists of many other changing systems. This total configuration of interacting systems will of necessity intensify the change of member systems. Each member system, changing and accumulating consequences of each change, continuously transforms both itself and its milieu. The unique character of the system is not sacrificed through interaction with other systems; this unique character constantly unfolds its inherent potentialities. The external factors of interaction act mainly to accelerate or retard the change of a system and to modify its secondary characteristics. External factors do not transform a system into something basically different from its inherent nature.¹⁵

Societies are integrated and mature in correspondence with the operation of a rule which permits its members to live together and work together in relative peace and harmony. Sotokin claims that the main reason for peace between nations, if such exists, is the operation of the golden rule between them. The disintegration of values relative to the golden rule within a society gives rise to civil strife or even civil war, and among nations leads to world war.¹⁶

IMPLICATIONS OF CULTURAL DYNAMICS FOR CURRICULUM CHANGE

IMPLICATIONS FOR IDEOLOGICAL CHANGE

The existence of great ideals and cultural goals in American literature, history, and art cannot be denied. The chasm between these traditional ideals of the nation and the actual beliefs and behaviors of the people in the present seriously weakens the

¹⁴ *Ibid.*, pp. 535-536.

¹⁵ *Ibid.*, pp. 696-697.

¹⁶ *Ibid.*, pp. 508-08.

influence of this country as a leader in international affairs and prevents progress toward a more mature society. The American social system is characterized by great strain between its ideological and its behavioral components. There is a vast difference between what many Americans *profess* and what they *do*. They often profess to believe one way but act in another. They "talk" democracy but do not behave democratically either at home or abroad. They decry communist materialism but the people of the world seem to remember best America's own materialism. Christian ethics are given much lip service in this country but seldom do they govern observed action. Everywhere *behavior has mocked stated ideals*.

Emphasis in this country has been placed on the professed or stated ideology of the people. Perhaps many people of the present generation are ignorant of the behavioral processes which could carry their stated ideals into action. However, it is more likely that a frightening number of Americans do not actually believe in their professed ideals. It is probable that they do not fail to behave appropriately in terms of their *actual* ideals— ideals that no one would dare to profess publicly. The drive toward correct public behavior has led many to compartmentalized thinking. Too often, ethical or religious beliefs have no place in the conduct of business and, apparently, "All's fair in love and politics," is an actual and private belief of many.

How much responsibility must American education share for this state of affairs? The potentially great ideology of America apparently has never been consolidated nor taught effectively in its schools. It is no wonder that our soldiers sometimes declare "We don't know what we are fighting for." In harrowing battlefield circumstances, the traditional national slogans sound hollow to them. They never achieved real faith or conviction in these remote ideals. Many American educators have considered that schools would be out of bounds if they took up this task of building values. The result is our national society presents a picture of something short of moral stamina.

Leaders in the progressive movement, notably Kilpatrick and

Childs, while noting the challenge of social change for the curriculum, originally placed their faith in the continuous reconstruction of experience,¹⁷ and stated the need for a "society composed of people who can creatively find their controlling ideas and ideals in the on-going process of experience itself."¹⁸ They thought education should emphasize a method for achieving a dynamic society. It should provide the learner with the security of the scientific method for controlling observations, experimentations, development of hypotheses, and testing through experience. It was assumed that learning to work under such conditions of scientific control would develop desirable values in each generation of learners which would accrue to the benefit of humanity. However, progressive education had such a limited trial, no general conclusions, pro or con, are possible relative to this proposition. In the later works of John Dewey and John L. Childs there appear to be modifications of original views on the role of adult-determined values in education. Here both men have demonstrated the importance of value systems laboriously built up by the culture over the years. Experience has proven the validity, they say, of certain of our common social values.¹⁹

Counts places his confidence in American education to take the best of this nation's moral and social values and forage a truly American ideology.²⁰ Curriculum activities would be directed toward the fulfilment of the values and principles of this ideology. No teacher could ever feel in this scheme of things that his job was unimportant. The profession of teaching would then have a substantial significance in the society beyond that which it now enjoys. This nation, principally through its educational system, could at last find out what it is truly capable of in this continent

¹⁷ William Heard Kilpatrick, *Education for a Changing Civilization*, New York, The Macmillan Co., 1929, p. 123.

¹⁸ John L. Childs, *Education and the Philosophy of Experimentalism*, New York, Century Publishing Co., 1931, p. 133.

¹⁹ John Dewey, *A Common Faith*, New Haven, Conn., Yale University Press, 1934, pp. 44-52; John L. Childs, *Education and Morals*, New York, Appleton-Century-Crofts, Inc., 1950, pp. 1-38.

²⁰ George S. Counts, *Education and the Promise of America*, New York, The Macmillan Co., 1943, pp. 104-105.

and in its relationship to the world. It could inspire its citizens, its teachers, and its students to unimagined levels of creativity in the process toward social and psychological maturity.

Yet, American education is not equal to this task at present. Counts says:

Although we have developed a good education, an education of which we can rightly be proud, we have never developed a truly great education, an education which expresses the best of our heritage. We have lived below the possibilities of our civilization.²¹

Like Sorokin, Counts speaks of the great unrealized moral commitments of our American civilization, the make-up of which insure a continuous dynamism of our national life if seriously applied. These are: (1) the ethics of the Judeo-Christian tradition, (2) the humanistic spirit, (3) the scientific method, (4) the democratic process, and (5) the cause of world peace.²² These values, meanings, and principles make up the best of America's potential ideology. In no period of history has such an ideology been effectively actualized in a society through man's behavior. If it were, it would by no means produce a static society; indeed, it is open-ended to the future and its creative possibilities would never be exhausted.

IMPLICATIONS FOR BEHAVIORAL CHANGE

The democratic process and the scientific method are at once ideological and behavioral. In the case of each a course of action is assured. The problem of developing a behavioral component which can truly translate into action the American ideology, will result from the development by the educator of curricular methods and teaching-learning situations which embody democratic process and the scientific method of problem-solving. Democracy makes use of the Judeo-Christian ethics and the humanistic spirit, and thus it incorporates much that the American ideology calls for. If true democracy could be developed in all institutions and

²¹ *Ibid.*, p. 19.

²² *Ibid.*, pp. 77-98.

societies in the world, there can be no doubt that this would be the greatest possible step toward universal peace.

The progressive education movement placed its faith in methods with the expectation that those methods would inevitably produce social values of worth to the child and to the society. That methods of procedure have crucial effects on the total learning cannot be denied. Many valuable methods have been devised by the progressive movement. Not only do the integrative methods developed by this movement promote more complex learning outcomes while sacrificing none of the basic skills, but these methods employ the scientific method and the democratic process as their rationale for learning. No group of thinkers before in the history of education has given more thought to the development of these twin processes; however, the progressives tended to rely too heavily on the probability of the emerging democratic values and processes in contrast to the intelligent guidance of their growth. The role of the teacher in deliberately setting up processes for desired ends should never be abrogated. Methods should never be considered learning in *toto*.

Educational methodology should become highly dynamic. Whatever methods allow for the greatest quantity and quality of human interaction, these are likely to be the most creative. Singular methods should go into limbo. Methods should change with the situation and with the dynamic content of American life. Methods will maintain a high degree of correlation under a more slowly changing ideology. There will be, always, a great distance between the actual behavior of the people and the adopted ideology; therefore, new ways of approaching the goals should be involved constantly. Probably no ideal set of methods will ever be settled upon. As teachers and students work through new methods of achieving their goals, the refinement of the ideology, in turn, is inevitable.

The behavioral component, in constant interaction with the ideological component and the material component, will have its peculiar effect upon changes in the total culture as well. Social inventions tried and tested in the schools will take their place in the

total structure of society, replacing methods which either no longer articulate the prevailing ideology or which do not articulate it as well as the new.

The culture can become crystallized in methodology, and the same is true for the curriculum. The authoritarian curriculum of the American school is a most obvious example of practices which have persisted in very much the same form for centuries. The subject-centered curriculum takes very little notice of the present dynamic culture. Its subjects were created to meet the original needs of a changing world, but that purpose has now often disappeared. Often retained because of inertia, these subjects have developed a questionable respectability under the guise of "mental discipline" or "transfer of training." Crystallization of curriculum can be effectively prevented by constantly devising a variety of methods and activities for achieving learning which in turn constantly refines ideology and materials.

IMPLICATIONS FOR MATERIAL CHANGE

Our nation has, potentially and actually, the best material component of any social system known or imagined. Because of the imbalance between the ideological and the behavioral components, the material culture has tended to dominate American life. Change in the former along the lines recommended above would not adversely affect the material wealth and prosperity of the nation although, admittedly, our material giantism is partly a result of strong materialistic values among our people. In the new education, ways will be discovered to use the material component in the achievement of greater human happiness.

The precept "altering the field alters the child" is as true for the material setting for learning as for any other component. Both society and the curriculum will be changed by improved tools, vehicles, buildings, teaching aids, etc. It is a well-known fact that slums, by their very material setting, breed crime and disease.

Attention to the type of school buildings and classrooms to be built may yield some productive results. The progressivists have already produced some significant changes in the physical setting

for learning. School buildings are more functional and less ornate than in the past. Classrooms are closer to the out-of-doors. Modern arrangement of furniture and materials in the classroom facilitates group activities and problem-solving. More and different kinds of books and instructional supplies help learners become discriminating and self-directing in their voyages of discovery in the learning process. The classroom of the progressive school is quite different from the stern and forbidding setting of yesterday with its rigid *rows of seats*. *In such a setting, it is no wonder that there were few compelling peer relationships or that verbalisms became the chief learning mechanism.*

The material component of education is open to vast improvement, experimentation, and development. If the tremendous technological knowledge already amassed by our culture could be applied to matters of education in a major way, there can be no doubt that important changes would occur in the curriculum. Students of tomorrow should be introduced early into the actual tools of living because of the rapidity and the acceleration of the change which Ogburn, as quoted previously, thinks will pervade their time. Students will have increasingly more to learn. The material setting will have to be moved closer to the real life of the total culture. Formal subjects may have to give way to guided experiences *in the factories, on the farms, in the laboratories, in the streams of commerce, in the social agencies and the like.* Education will have to become less and less artificial and more and more a genuine part of the on-going life of the culture itself. In short, the materials of the learning process will have to become the actual tools of everyday living.

SUMMARY

As the teacher surveys the present situation in the world with its acute strain in social processes and the almost constant threat of open war painted against an enduring backdrop of cold war, he may well feel a sense of almost utter futility. Although men have dreamed of "one world," the world has never achieved this wholeness. Every age has been an age out-of-joint. It is incorrect, un-

fortunately, to speak of a "world community." The United Nations is not an integral, world society, though one would hope that eventually it may become so. It cannot function effectively until a much greater number of men and of nations accept mutual, or at least similar, working values and behaviors. This can come to pass only through social change. Social change is the only way to move toward maturity in interpersonal, community, national, or international relations. At the very base of it all is a particular kind of social change—*curriculum change*. How shall we achieve this dream of a changed, better world except through education, a changed, better education?

The key component which educators must concentrate upon for effective curriculum improvement is the *behavioral* component. For change in people and their ways of doing things is the greatest need of the hour. Curriculum change can contribute much to change in the total culture when it concentrates upon changed behaviors in the rising generation.

Selected Readings

Brameld, Theodore, *Philosophies of Education in Cultural Perspective*, New York, Dryden Press, Inc., 1955, Chaps. 4, 5, & 6.

Lerner, Max, *America As a Civilization*, New York, Simon and Schuster, Inc., 1957, Chaps. 2, 4, & 12.

Sorokin, Pitirim A., *Society, Culture and Personality*, New York, Harper & Bros., 1947, Chaps. 17, 45, & 46.

Wish, Harvey, *Society and Thought in Modern America*, New York, Longmans, Green & Co., 1952, Chaps. 22, 23, & 24.

CHAPTER 17

Curriculum Improvement Programs

Participation in coöperative curriculum programs to improve the learning situation for children is an integral, highly important part of the work of the professional teacher and administrator. Just as important is the participation of parents, other laymen in the community, and, of course, the children themselves. Coöperative programs for curriculum improvement must be interactive with the daily curriculum development of the classroom if any real success is to be attained. *It is unnecessary to remind most school people today that curriculum development really takes place when teachers and pupils undertake to learn, in the classroom or wherever the learning situation takes them.*

With this concept of curriculum development governing our thinking, the most distinctly professional behavior of teachers is constant study, evaluation, and experimentation to aid learners in their quests, just as research and laboratory work in the medical field leads to and emerges from the treatment of patients. As in the medical field, this work cannot be left entirely to individual initiative or to accident. Much help can be rendered the teacher through coöperative efforts, through group problem-solving, and through special services. It is important to analyze, profiting from the mistakes of the past, how the coöperative approach to curriculum development can be effectively organized and led.

PRINCIPLES GOVERNING CURRICULUM
IMPROVEMENT PROGRAMSI. TO CHANGE PEOPLE THROUGH PROBLEM-SOLVING AND
DEMOCRATIC ACTION

During the past half-century school personnel have poured a prodigious amount of time and energy into large-scale, coöperative curriculum improvement programs that typically have resulted in only superficial improvements in the curriculum of the elementary school. The regular failure of such programs to achieve creditable success has been a matter of grave concern to leading thinkers during the past decade, among them Stephen Corey, who says: "A major difficulty with coöperative curriculum development, of course, is that while the process is relatively easy to describe, very few of us have learned the attitudes, the skills, the values, and the information that are required if this method of improving a school program is to have any chance of succeeding."¹

Too many of such programs apparently have concentrated upon quickly drawing up paper changes to justify the time and money spent by school systems and professional personnel. An example of such "paper" programs can be seen in the rather widespread practice of attempting to initiate a curriculum program by encouraging teacher groups to write extended lists of instructional objectives. Too often, these written lists of objectives have been filed away and almost forgotten because such statements are most likely to be abstract and far removed from the realities of classroom practice.² During the time-consuming process of listing abstract objectives which were supposed to indicate the directions the whole curriculum project was to take, the present problems of the teaching-learning situation were by-passed. The popular saying among many school people that, "We can't go anywhere until we know where we are going," should be examined. This is certainly not charac-

¹ Stephen M. Corey, "Coöperative Curriculum Development," *The Educational Courier*, XXV (December, 1954), 10.

² Edward A. Krug, *et al.*, *Administering Curriculum Planning*, New York, Harper & Bros., 1956, pp. 8-9.

teristic of a scientific problem-solving attitude. The scientific investigator is not absorbed with where his investigation is taking him but rather in attending to the immediate problem and in developing possible solutions. The preoccupation with objectives, then, prevents us from focusing upon our real problems. Curriculum problems invariably involve what people are doing with processes. Curriculum change is, primarily, change in teachers and their ways of doing things. The traditional practice of listing instructional objectives relegates to the background the main purpose of coöperative problem-solving, namely, changes in the people involved themselves.³ Democratic process in curriculum programs should not have to be justified in a democratic society. If the school is to assume its obligation to develop citizens who will participate to the fullest in the democratic process of society, then, of necessity, it must function as an effective example of democratic procedure. Teachers cannot be expected to develop democratic process in their classrooms if their own professional relationships are governed by authoritarian or laissez faire attitudes and procedures. One of the chief results of democratically organized curriculum programs should be the growth of democratically functioning personalities among teachers and administrators. These personalities, too, will have a direct effect on children in the classroom.

Every person needs to be independent, respected, and self-respecting, and to have status and wholesome interactive relations with other individuals in a social group. Problem-centered group process furnishes the operational setting in which these needs can be met. These human relationships make possible the fusing of separate and unique individuals into a social group capable of thinking and working toward a common goal, the solution of a common problem. The problem might impinge upon individuals in different ways and degrees and each individual always has his own unique objective; yet, there are enough universals in the problem situation to bind them together as a unit. The mistake many group leaders make is trying to develop uniformity of think-

³ Virgil E. Herrick, "Evaluating Curriculum Improvement Programs," *Educational Leadership*, VIII, No. 4 (January, 1951), 234.

ing and response to the problem. Individual expression and creativity within the plan for group organization and focus is essential. Given satisfactory interaction and reciprocal relations within the group, the process develops among participants a wholesome morale, a feeling of "we" and of belonging, and an enthusiasm for cooperative enterprise. The individual, acting on impetus from the energies built up in the group effort to solve a problem, of his own volition continues, apart from the group, to direct his activities toward the problem's solution.⁴

Original ideas will surface from the great pool of thinking going on in the interactive process. Few ideas can be imposed successfully upon the group from the outside.⁵ The group seems to prefer its own intellectual resources. Contributions to the intellectual exchange, like those of a child in the classroom, help the individual to achieve some feeling of status. The group members prove to each other the old adage that two heads (or multiples thereof) are better than one when they work together toward common goals. As they exchange ideas on a reciprocal basis, they tend to take on the characteristics of a social organism: self-sufficiency, resistance to outside interferences, oneness of purpose, loyalty.

II. TO INITIATE AND CONTROL CONDITIONS FAVORABLE TO CURRICULUM CHANGE

Deep changes can occur only in a person willingly seeking to be different. The desire for change must come from within the individual himself. On the other hand, once the scene and climate for change have been established, some change in individuals can be expected as inevitable. Administration fulfills its function on a high plane when it provides the conditions necessary for a teacher to become a happier, more successful, more secure person, in turn a better leader of children. Of course, this cannot be accomplished by making all the decisions for that teacher, by formulating a rigid

⁴ Kenneth D. Benne and Munyan Bazdar, *Human Relations in Curriculum Change*, New York, Dryden Press, Inc., 1951, pp. 66-96.

⁵ Herbert A. Thelen, "Group Dynamics in Curriculum Improvement," *Educational Leadership*, XI, No. 7 (April, 1954), 413-414.

routine, or by reducing the need for change. On the other hand, the knowledge that change and inventiveness are not only permitted but even encouraged will make the normal person function as a happier, more complete personality. Given this attitude by an administrator, a faculty will strive to improve, and curriculum change will move with decisiveness. Therefore the most effective administrator does not attempt to prescribe for teachers. He may tell them what he thinks at the appropriate time in group problem-solving, but he does not expect them to follow his advice simply because he has the status of leader. He may insist that they hear and consider all alternatives, including his own, before acting, but when the administrator can see his own solution bypassed by the group and not feel loss of face, he is a democratic leader.

The coöperative curriculum development program cannot be the pet scheme of any one person. It is concerned with improvement of the total teaching-learning situation. It should involve all personnel, and each person should have a voice in the directions to be taken. Yesterday's administrator thought of the training of the teacher in service. Today, he ponders his role as a leader whose chief function is to stimulate professional growth through coöperative means and to coordinate the efforts of all. Instead of concentrating on telling or showing teachers how to do their work better, the supervisor or principal leads them in the analysis and evaluation of the total teaching-learning situation so that the whole professional community might find out how to improve that situation. The professional growth of the individual, then, is bound up with the improvement of the total curriculum. Leaders should help teachers where possible, to see themselves realistically, to diagnose learning situations in which they are involved, and to develop the habit of searching for better answers.

As the educational leader works with teachers, pupils, and parents in curriculum planning, he helps to provide the know-how, coordinates plans for use of resources, schedules activities, secures needed consultative help, encourages the active participation of many people in the development of goals and the ways to achieve them, and encourages their continuous evaluation of those goals.

and methods. This is a necessary status role of dignity and respect, yet democratic and nonauthoritarian.

The administrator must know what effective teaching is, and recognize that there are many different kinds of effective teaching. He should know and understand the growth and development of children. He can be of immense value to a group if he is constantly on the look-out for new materials and for ways to employ his special competencies to aid the group in pushing its program forward.

Some administrators act in an autocratic fashion, mistakenly, in order to appear favorably in the eyes of the lay public and to maintain control over teachers and pupils. As democratic leaders, however, they soon learn these assumptions are false. The highest place is reserved for an enthusiastic and dynamic leader who can inspire others to greater effort. It is leadership and not dictation that elicits maximum efforts.

When a teacher recognizes a problem and appears eager to seek new answers, the administrator is presented with an opportunity to cultivate creativity, self-direction, and extra effort. He should approach the opportunity with enthusiasm, lending encouragement and providing resources as far as possible. He should work with a group in the same way, realizing however that there can hardly ever be one focus of interests among a group of teachers. He will help the group organize so that the varied interests and needs of all will be accommodated sooner or later in the process of curriculum improvement. He may require all staff members to take part in some aspect of curriculum development but he will recognize that each individual should be encouraged to work on problems which interest him. An initial step for him will be an awareness of what his teachers' own recognizable problems are. Under such leadership, teachers will tend to live up to what is confidently expected of them. Once caught up in the deliberative group process or in their own action research, they will extend themselves beyond their own preliminary or immediate objectives.

While considering how to enrich the materials and resources of the curriculum, the principal and teachers should look to parents and to the physical, social, and industrial resources of the com

munity. Rich learning experiences, for more children, will result if all the teachers in a school unit plan together and coöperate in the use of these materials and resources.

One of the most beneficial experiences for a faculty ensues when an administrator arranges visits to other schools. When teachers interact with other teachers who are in another situation, especially at the same grade level, stimulating ideas are often exchanged. They find they have, or have had, similar problems, and, by sharing their experiences and solutions, they often arrive at a newer, more professional level of thinking about them. After the visitations, the coöperative pooling of ideas and suggestions brings to light many new answers for the local situation.

Few teachers will engage in action research if there is a feeling of insecurity or fear. Teachers must feel that their principal and supervisors understand what they are trying to do and approve of their efforts. Only in a climate of freedom, then, will faculties be released to participate in curriculum development endeavors at their highest pitch, to concentrate on the best interests of learners, undeterred by worries concerning the security of their employment.

The one-to-one relationship of administrator to teacher is not the only area for consideration of how the climate of feeling surrounding the teacher may be improved. The principal and supervisor are responsible, also, for the encouragement and intelligent guidance of genuine coöperation among teachers, for the group itself conditions, to a considerable extent, the actions and the feelings of each member. In fact, throughout the school environment every person who in any way contacts the pupil or the teacher has a definite influence on the climate of the classroom. Therefore an important job of the status leader is, through all means available, to improve the human relations among all participants of a curriculum development program.

The leader establishes the psychological bases of staff morale by providing an atmosphere of responsible freedom and approval, by informing teachers of what may be reasonably expected of them by the school board and other authorities, and by behaving consistently in his relationships with all concerned. The need for self-

realization by teachers can be partially met by stimulating them to participate in formulating policy and by assuming significant responsibilities. Another area of concern for the administrator is the elimination of unnecessary teacher anxieties. As Bushong says: "The modern school administrator soon learns that his staff cannot function at its best if the horizon is overcast with fear, doubt and suspicion. . . . By building a good working climate, on the foundation of trust, sincerity and mutual respect, the leader can lay to rest many nameless anxieties of the staff."⁶

If the teacher is the central figure in the development of classroom climate, surely the administrator is the critical factor in the emotional climate within which the teachers work. Adults, like children, desire social approval and identification with a group. Teachers also reflect, in their estimates of themselves, the kinds of treatment they receive from administrators, colleagues, and the parents of the pupils. Positive action will be hindered by the communication of unhealthy emotions in interpersonal relationships.⁷

III. TO STIMULATE ACTION RESEARCH AT THE CLASSROOM LEVEL— BY GIVING SANCTION, STATUS, AND ASSISTANCE TO TEACHERS

Administrators, curriculum directors, and curriculum councils often have approached curriculum improvement programs for a school system with mass meetings, the compilation of instructional objectives by teacher groups, or discussion "buzz" groups. The dilemma in such approaches usually is that either administrators will appear to dictate a predetermined program, or an ill-prepared group will flounder in confusion. Invariably, individual teachers feel that the initiative and responsibility for action lies with administrators after attending such meetings. At best, teachers return to their classrooms believing the curriculum program to be somewhat remote from their working world.

Group discussion and planning can be a far richer experience

⁶ J. W. Bushong, "Targets for the Young Administrator," *American School Board Journal*, CXXXII (February, 1956), 29.

⁷ A. B. Hebeisen, "Look at Employee Morale," *Education*, November, 1955, p. 167.

when the concrete results of action research can be shared. For it is often remarked that discussion leads nowhere when participants are pooling ignorance and gossip. Since curriculum change cannot be dictated by the status leaders, and group discussion often proves fruitless when staff members start "cold," action research projects offer a problem-solving situation. Supervisors and administrators should encourage and assist individual teachers in solving their own problems through action research projects established within the framework of the total design of the school's curriculum, school policy, and the resources available.

What is action research? In any mode, research on the curriculum is difficult. Like the social process and personality, the curriculum process is so complex, it does not lend itself readily to narrow focus or structural analysis of parts. Formal research in the curricular components can lead to distorted findings. Even the clear findings of formal research in a skill area, for instance, may be inoperable in the larger matrix of the school program. Moreover, formal research requires a special set of conditions which seldom can be devised in the everyday work of the school. Action research, on the other hand, can be used directly with the on-going curricular development and change itself. If a teacher is plagued by doubts concerning something he is doing and considers "What would happen if I tried something different?" that teacher is ripe for action research. Carrying out that something to see if it will work is action research. Action research, then, is improvement of the teaching-learning situation on the job. It places emphasis upon practical experimentation and problem-solving as the teacher meets the children in the learning situation.

The primary outcome of action research is the changes in the people who engage in it. The changes take the form of new insights, new understandings, new techniques, new feelings, etc., which are a personal growth in the individuals involved. Other results may be derived from other's knowledge of the experiment and its results. Such knowledge may lead others more quickly in their own direct experience, and to proceed with fewer mistakes. Therefore the reports of action research are as important as those

of formal research. Keeping informal records, making periodic observations, giving tests, developing reports on special subjects affected by the experimentation—all help the teacher to better understand what the research situation is accomplishing and give to the teacher the objective kinds of data which can be communicated to others.

Teachers and pupils are partners in the learning experiences controlled by action research. The teaching program does not suffer; to the contrary, action research itself is a method proven many times to be highly successful in promoting learning. It places everyone concerned in a scientific frame of reference. Valuable attitudes and skills can be immediate rewards for pupils as well as teachers.

Administrators should provide for the sharing of action research projects in process and upon culmination. These projects may appear, at first, to be isolated and separate studies but leadership can, over a period of time, recognize those which seem to be promising and call attention to them, provide for teacher visitation, or specific reports. Teachers in these separate patterns of action research will share and grow, then, in situations created by supervision and administration. As the projects mature under the guidance of curriculum leaders, specialists, and various kinds of consultants, the separate identities of the projects will become secondary as common, helpful elements emerge and are accepted in general practice.

IV. TO COMPILE CURRICULUM RECORDS TO SHARE WHAT HAS ALREADY HAPPENED

Action research that seeks new answers in the process of curriculum change need not always be recorded in writing. Often, however, it is valuable to a teacher's associates and to the professional world to receive a report of the project. As in the case of formal experimentation, the solutions can be recorded only after the *experience* of research. Teachers may profit somewhat by recording tentative hypotheses or listing questions to be explored; but the old habit of compiling long lists of instructional objectives is totally unprofitable. If anyone should desire to engage in such

an activity in connection with curriculum projects, lists of such objectives written during the past half century are available for thousands of courses of study. These objectives, however, have been written too often by people with a narrow academic orientation who appear bent solely on raising another set of graded standards for a heterogeneous population to hurdle as a group. Blind to the natural and differentiated characteristics of children with their great range in abilities, these tiresome products of many a past curriculum project tend to pull teaching down from the level of professional competence and respect.

What intelligent teachers really would study for help in the teaching-learning situation are:

1. Logs of unusual experiences by learners giving the operational steps and narrative events of projects.
2. Learning materials used in particular experiences, their cost, and their sources.
3. Drawings or pictures of apparatus and construction products, their patterns, measurements, and operational characteristics.
4. Bulletin board ideas.
5. Case studies of "problem children" complete with expert interpretation and recommendations for action.
6. Reviews of instructional films by teachers who work on the same level as themselves.
7. Write-ups of science experiments with ample explanation of why the demonstrations may not work as expected.
8. Typical results which may be expected of children in various units of work in terms of their mental ages.
9. Novel ways of introducing pupils to children's literature.

This is an incomplete list. The type of items in it suggest what is really helpful to write down about the curriculum. The neat and carefully drawn course of study for a particular grade becomes increasingly less useful to the practical teacher who is learning to teach children in terms of their individual readiness and maturity. The subject matter objectives of a course of study for Grade 4, for example, will be applicable to only a fraction of the pupils in

Grade 4, and not all of these at the same time. For many teachers, the implication has been that all children of a grade group were to cover the material of the course of study for that grade, and if they could not do so, they did not belong in that grade. Where such a concept of teaching prevailed, the able pupil too often was held back to the pace of the class. Doubtless, then, rigid adherence to the course of study for all children has given justification to some critics of American education who declare that instruction is "pitched to the mediocre."

The detailed course of study also carries with it the implication that the subject matter and experiences described in it will be imposed systematically on the learners, and, as a result, the rationale in the typical elementary school classroom of the nation has remained authoritarian and autocratic despite significant evidence a democratic, problem-solving curriculum is best for optimum development and mental health. Nothing appears more obstructive to the development of such a curriculum than writing about and adherence to graded courses of study. Curriculum improvement programs which are based on this system and on these products, however, engender a significantly different psychological climate for curriculum planning. Opportunities for genuine teacher growth are necessarily limited by the process.

Reporting experiences in curriculum development, then, is the final phase of a curriculum improvement project. Naturally, this writing should not take the form of courses of study which duplicate, in the main, textual materials, but rather, it should report action research and the suggestions for procedure which come from significant and rewarding experiences in the classroom. When the curriculum is perceived as that which goes on each moment in the learning situation and that the story of the curriculum in any particular classroom cannot be written down in advance, then school systems will recognize that curriculum improvement programs are continuous and integral with the on-going curriculum of the teaching-learning situation, as the research and laboratory work of the physician relate to the patient and his treatment. This will mean that administrators and teachers will place their faith

in, and expend their effort toward, significant change in people rather than changes in their paper work.

THE DELTA COUNTY CURRICULUM PROJECT

Perhaps too few curriculum studies have focused on the mental hygiene point of view derived from recent knowledge in the behavioral sciences.* Moreover, too few curriculum studies have utilized the process of action research, a process in which people study problems *real* to them in their usual on-the-job situation and in which the primary results are changes in these same people and their ways of doing things. The teaching, supervisory, and administrative staffs of the four rural school systems of Delta County, Texas, recently completed a three-year action research study of their curricula which had as its major aim the focusing of the total school program on mental hygiene.

The faculties of the four rural school systems of Delta County in meetings of their local teacher association decided to undertake a study of their existing school curricula and facilities in the fall of 1952. A steering committee consisting of the county school superintendent, the county school supervisor, the four local school superintendents, and one classroom teacher from each of the four divisions—primary, intermediate, junior high school, senior high school—met to plan the project and to obtain a consultant. The committee contacted the Texas Education Agency and the Hogg Foundation for Mental Hygiene for advice and assistance. By mid-November, the group had received a tentative promise of financial assistance from the Hogg Foundation and a promise of consultative help from the Texas Education Agency for at least the initial phase of the study. The steering committee made contact with East Texas State Teachers College for the services of a resident consultant since all of the school concerned lay within twenty-five miles of that institution. By early December, the committee, the consultant, the Texas Education Agency, and the Hogg Founda-

* This section, part of a monograph by W. Ray Rucker, "A Curriculum Focuses on Mental Health," was published by the Hogg Foundation for Mental Hygiene, University of Texas, 1956. Reprinted with permission.

tion has played a role in the group deliberations, and the way was paved for mass involvement of all professional personnel.

During the first month, the consultant spent considerable time in each classroom of all the schools involved in the study to orient himself regarding the existing practices, resources, and facilities, and to meet each staff member personally on the job. He encouraged teachers to visit each other in classroom situations both in the same system and in other systems. The steering committee set a schedule to facilitate these visitations, and the superintendents of the various schools released the teachers from the regular school day for the visits. Since the four systems had decided to work together co-operatively in the project, the intervisitation of teachers helped the individuals to know each other better and to exchange ideas. Changes in the teachers and their ways of doing things began, noticeably, at this time.

During the early months of the project, the consultant and guest speakers obtained either by the steering committee or by the consultant, made several presentations to the group of information on the nature of action research, and recent research findings in the fields of mental hygiene, psychology of learning, and curriculum development. These presentations stimulated general discussions in which teachers' questions and problems relating to their existing classroom situations increasingly took the center of interest. The consultant arranged for a problem inventory, the formation of work groups on the various grade levels, and an investigation of the professional literature on problems of interest to each group.

This phase of the project led to a significant and hoped for development—an expression by several teachers of the desire to experiment with new methods and techniques in their own classrooms. Interaction between the study groups and the action research going on in classrooms became commonplace, the one contributing importantly to the other.

The consultant and the county elementary supervisor helped teachers get their experimental projects under way and furnished guidance to sustain them. These action research projects took various forms. Some teachers wanted to organize children in demo-

cratic and problem-solving activities in a unit of work; others were concerned with getting immediately to some of the individual problems of their children and chose to develop case studies; other projects involved sociometrical techniques, field trips, planning and carrying out the landscaping of the school grounds, free expression art projects, and group guidance. Teachers who saw relation among these types of activities found it desirable to combine several in their classroom programs. Often one type of activity grew into another.

The teachers expressed a need for constant help from the consultant and other persons who had had experience with the techniques and ways of working involved in this method of curriculum study. They found some security and real help in exchanging ideas and experiences with their fellow teachers in their own and in other school systems of the four coöperating districts. For this purpose, frequent small group meetings were called to discuss a particular problem. General meetings of the combined staffs were held once monthly during the entire project. Not only could teachers enjoy the satisfaction of group planning, experimentation, and reporting, but also the individual teacher often expressed the pleasure and satisfaction of personal growth. The consultant and other leaders in the group constantly exploited opportunities in both school and community situations to call attention to the success of individuals. The individuals, in turn, often expressed appreciation for the climate furnished by the various administrators in which experimentation was encouraged.

Not all was satisfactory, however. It was difficult to make the study coöperative, especially among the school systems. Progress was not even, and sometimes it was lost for lack of effective consolidation. Teachers spent considerable time in studying children and in collecting data of all sorts relating to their classroom experimentation, and, yet, it was difficult to find time to record behavior accurately, to administer and score tests, and to use the various scales and techniques which were developed. Moreover, the "community school" concept, as it developed, took more and more of the extra-class time of teachers. Keeping an "eye on the ball" or

their major objective was not easy. Loss of perspective often led to confusion and discouragement. The idea of action research, nevertheless, triumphed. The overburdened teacher was much more willing to undertake an in-service professional study contributing directly to his classroom situation. Finding time to carry on even this type of study was a problem, but pleasure was expressed over the definite help given the teacher in the solution of problems during the ordinary course of classroom work.

SCOPE AND SEQUENCE STUDY

In addition to the experimentation in curriculum design, teaching techniques, and guidance by teachers, the Delta County group undertook a study of the efficacy of rural education in general from Grade 1 to high school graduation, and the role of the small rural high school in particular. Problems relating to the limited materials available in small school systems, the appropriateness of a formal curriculum for a rural region, the apparent lack of justification for the existing scope and sequence, and related questions led the group during the early months of the study's first year to a general analysis of the scope for each grade level and how the work of each grade contributed to the total sequence. It became apparent that there was no recognizable scope for some of the levels. Scope and sequence was determined, if at all, by the particular textbooks in use. The group decided to work out a scope and sequence without regard, necessarily, to the available textbooks but, rather, with the considerations of child development, mental health principles, needs of modern society, and needs of their own rural region in mind. The group then formulated a new program, the framework of which is represented by the following:

- Grade 1: Living Together at Home and at School
- Grade 2: Living Together in Our Neighborhood
- Grade 3: Living Together in Our Larger Community
- Grade 4: Living Together in Our State
- Grade 5: Living Together in the United States
- Grade 6: Living Together in the Americas

Grade 7: Living Together in One World
Grade 8: Understanding Ourselves and Others
Grade 9: Understanding the Problems and Potentialities of our State
Grade 10: Understanding Our American Democracy
Grade 11: Understanding Our Economic and Technological Culture
Grade 12: Understanding Present and Past Efforts Toward World Coöperation and Universal Peace.

Units and projects were tried out during the three years of the study at each grade level, in terms of the theme for each grade, as indicated above. Gradually the units, projects, or other outlines which represented the development of a comprehensive teaching program for each grade took form and were bound into curriculum guides.

The grade themes in themselves reflected desirable concepts of mutual coöperation among people and of the importance of facing the realities of a modern world in the process of rapid change. This mental hygiene framework for a curriculum was complemented by problem-solving units such as: "How We Work and Play Together at School" in the first few weeks of a first-grade term, "How We Can Understand Better Our Parents and Other Adults in the Community" in Grade 8, "How Democracy Works in Everyday Living" in Grade 10, and "How Men Have Struggled to Build Up a Universal Code of Law" in Grade 12. Each unit contributed to the general concept expressed in the theme or scope for that grade.

This program was carried on in self-contained classrooms in Grades 1 through 6 and can be described as an integrated program supplemented by systematic teaching in the skill areas. In Grades 7 through 12, this program was organized as a *core* involving approximately half of the school day in two of the high schools. In the other two high schools, topics related to the grade themes were introduced into the regular courses wherever possible and into the assembly and club programs. Methods of learning by students changed significantly in the former; no changes appeared in the latter.

STATEMENT OF PURPOSES

Like most teachers, supervisors, and administrators, the faculties of the Delta County schools were familiar with the several comprehensive statements of educational objectives available to the profession like that of the Educational Policies Commission. The group never felt a need to revise such comprehensive statements. However, as reading, study, experimentation, and discussion went forward within the group, especially in the more unfamiliar area of mental hygiene, the group began to grope for generalizations which could express the meaning of action research based on mental health and thereby improve the communication and thinking of members of the group. This development came to fruition near the end of the first year of the study in a preliminary draft of purposes. This draft was almost continuously revised until the end of the study and the final statement was as follows:

A CURRICULUM FOCUSED ON MENTAL HYGIENE SHOULD:

1. Provide daily experiences in democratic living which help each child to gain status or a feeling of belonging in his group and in his community.
2. Provide situations daily in which each child can enjoy feelings of success or achievement in terms of his own potentialities and of group goals.
3. Provide situations daily in which each child gains new and challenging experiences.
4. Provide a climate of feeling in human relationships which help each child to grow in emotional security.
5. Provide for the purposeful and functional acquisition of the tools or basic skills essential to effective living in today's world.
6. Provide for a rich contact with the accumulating cultural heritage in the solving of present problems and in the pursuit of leisure.
7. Provide experiences demonstrating how science and democracy promote constructive change through problem-solving and group deliberation, and how our American ideals are so high, we always move forward.

It appeared to the consultant that this statement of purposes resulted in the first genuine feeling of solidarity in the county-wide group. It became more than a message to themselves on the daily job; it became also a message to the world by a group dedicated anew to the mission of education in a free society.

DEVELOPMENTAL HIGHLIGHTS OF THE PROJECT

Behind the statement of purposes, as developed over the three-year period, there were a number of critical events, new insights, and results of experimentation and study which might be beneficial. Maximum interest probably will be served by an analysis of the thinking behind the actions, as much as by the actions themselves. Experience proved to the consultant that new techniques tried out merely upon suggestion by another are seldom successful or enduring. On the other hand, teachers who had a problem to solve and made a real effort to study and think through the "why" back of the technique utilized usually found the technique successful. On the basis of a number of needs felt among teachers, a study program was instituted parallel with classroom experimentation.

References to status or the feeling of belonging in the professional literature and in presentations to the group provoked interest in the work groups. A relationship between democratic values in group process and the opportunities for the development of the feeling of belonging became apparent. The experiments of Kurt Lewin and associates⁹ in "social climates" were reviewed. Democracy was found to be the best climate suited to the development of mental health in general and to the development of belonging and group solidarity in particular, whereas autocratic and laissez faire social climates tended to cultivate egocentricity and forms of aggression. Hostility and tension among members of the group were found to have emerged especially in the autocratic climate.

⁹ Kurt Lewin, Ronald Lippitt, and R. K. White, "Patterns of Aggressive Behavior in Experimentally Created 'Social Climates,'" *Journal of Social Psychology*, 10 (May, 1939), 273-299. See also Kurt Lewin, "Experiments on Autocratic and Democratic Atmospheres," *The Social Frontier*, 4 (July, 1938), 316-319.

Since most of the teaching in Delta County schools was admittedly of the autocratic or authoritarian type, this information appeared to make a profound impression among the teachers. They noted other implications of democracy for constructive classroom work. For example, democratic groups are more stable in structure, more objective in evaluation or interpretation of events, more inclined to have a feeling of "we," more inclined to choose coöperative rather than individual endeavors, less likely to involve personal feelings in the give-and-take of discussion or criticism, more inclined to develop constructive and sustained work habits, and more likely to develop a feeling for group property and group goals.

Still trying to understand the full significance of the feeling of belonging in the classroom, teachers reviewed several methods and techniques advocated in the professional literature, among them the unit or project method and the sociogram. The unit method was acclaimed for having democratic and problem-solving processes which provide a satisfying role for every child to play in achieving the goals of group endeavor. Further, heterogeneous grouping was held to be an advantage in a democratic situation which placed great worth on each child in his own right and as a group member. Each child was seen to contribute in his own unique way to the needs of the group, and through these unique contributions received recognition from the group as a worthwhile member. The relationship between the process of achieving status in a group by children in their own classrooms and the data which teachers secured from applying the sociogram technique led to new insights, and led, in turn, to the development of the case study technique of children who appeared to be social isolates. Group problem-solving appeared to meet individual differences through utilizing those very differences to advantage in the typically differentiated tasks of the process.

Finding that individual differences in a class constituted a blessing rather than a curse in the unit method of teaching, the Delta County teachers wanted to know more about those differences. They found that a random group of 6-year-old children in a typical

first-grade class will exhibit a range of more than four years in mental age and in such specific factors as reading or number readiness. Further, it was found that these same children on reaching Grade 7 will exhibit a range of about eight years in mental age and most achievement areas, and that one could expect the range of differences to increase steadily with growth and education.¹⁰ Although the professional school people of Delta County had heard the term "individual differences" many times, the facts about them were difficult to believe. This information led to a comprehensive testing program in the four school systems and an analysis of the data on their own children.

One of the early consequences of the testing program was the location of children who needed special help. Concurrently, the teachers were gaining information on developing in their pupils the feeling of success or mastery. They concluded that the mass assignments, the mass tests, and the comparative marking system used were condemning too many children to daily failures and inevitable frustrations. They recognized that these sustained failures left many children defeated, often unwilling to try. They saw the American school contributing unwittingly to feelings of inadequacy and hostility instead of concerning itself with the development of feelings of success, mastery, or adequacy within each child every day. Further, they concluded that the curriculum should act to rescue the child from unfair competitive situations in which success is impossible and to place him in coöperative situations in which his unique abilities can be utilized to best advantage in group undertakings.

In classrooms where the unit method had been introduced, teachers found a new freedom to help individual students with problems in the areas of reading, perhaps, or arithmetic or English. Success in such areas was no longer measured by the progress of others but by the amount of progress the individual was making

¹⁰ E. F. Lindquist (ed.), *Educational Measurement*, Washington, D.C., American Council on Education, 1951, pp. 9-14. See also Willard C. Olson, "Redefining the Tasks of Education," *Educational Leadership*, IX (January, 1952), 222.

in terms of his capacity to learn in such areas. Therefore feelings of success were possible for the child no matter whether his activities served the group of which he was a member or whether he achieved progress in his own skills program. Teachers encouraged pupils to set their own goals in skill development and to judge their own success under guidance. Thus children often knew when they had succeeded and needed no mark or verification by the teacher. The democratic values involved were significant: the authority for what constituted success passed from the teacher to the pupil to a great extent, with accompanying feelings of self-respect, feelings of independence, and feelings of responsibility.

Numerous case studies were made on children with unusual problems or experiences. One 11-year-old, Bill, was known as a behavior problem. He received from teachers and pupils alike more credit for mischief than was his due because of his unfortunate reputation. He had lost all interest in school, preferring to play alone, as his mother testified, in the fields or along the stream on his father's farm. When Bill entered Grade 5, the teacher, seeking to use some of her new-found knowledge gained in the coöperative curriculum study, capitalized upon the children's summer vacation experiences to initiate the unit: "How the United States Preserves Its Beauty and Provides for Recreation." She helped Bill find a place on the committee and kept her eye on him during the organization and planning.

She suggested that the committee make use of Bill's special ability to find interesting things in the fields for exhibition in the class. All eyes turned on Bill with a new interest. Bill responded with an affirmative attitude; this was something he knew he could do. The next day he appeared in class with a large stone containing several unusual colors which he had found in the stream bed on the farm. The other children were genuinely appreciative, and Bill was definitely "in" with them. He promised to bring in other objects for the committee's exhibit and subsequently did.

Having tasted approval and success in one operation, the status-and-success-starved boy tried his luck in other types of endeavor.

He undertook to write the story of how he had discovered the large stone and how he had carried it to the house and later to school. Under the guidance of the teacher, he weighed the stone, compared it with various rock samples in the high school science laboratory, and found its properties and uses. He found a dictionary useful in finding the new words he needed to draft his story as well as to spell those he had heard about or previously used. Since the stone was composed of several metallic substances, the teacher suggested he compare its weight with other rocks or substances of comparable size. This suggestion set off a number of problem-solving activities in arithmetic which captured the notice and the participation of the entire class.

Bill submitted his draft of the story to the teacher for criticism before allowing committee members to see it. It was *his* story, but he wanted all the help he could get to make it good. After using some of the teacher's suggestions and correcting the mistakes in grammar and punctuation checked by her, Bill enlisted the help of his committee members also and finally became satisfied after re-writing the paper three times. The committee was glad to have Bill read the story to the class as a part of its progress report one Friday. He was proud but scared, and yet he succeeded because he discovered that everyone seemed to be on his side. The teacher obviously was proud of her own professional efforts, testifying that Bill was no longer a problem child but a new and inspired leader of his group.

There were many more cases—all success stories for both children and teachers. Who can gauge the lasting benefits of these acts of human conservation? Each case described contributed to the fulfillment of the major purposes of the curriculum which the Delta County group had resolved to provide for the children in its schools. There were indications that status, mastery, new experience, emotional security, functional skill development, and the rest were being built in a new curriculum rapidly coming to focus on mental hygiene.

THE DIAGNOSTIC AND EVALUATION PROGRAM

Although each of the schools involved in the study had been utilizing achievement batteries for diagnostic purposes, none had instituted a program supplementing these batteries with intelligence profiles, sociograms, mental health tests, interest inventories, and other recent, useful instruments and techniques. The sociogram was used almost from the beginning of the study, and case studies developed during the second year. The full diagnostic program did not get into full swing in all schools until the third year. Changes in marking and reporting progress was delayed deliberately until the communities became adjusted to the earlier changes in classroom method. However, this change had been completed in the elementary schools by the end of the third year and had received the enthusiastic approval of at least one school board and the Parent-Teacher Association of the same community.

The evaluation program moved away from mass achievement examinations for determining marks and the unfair competition attending them. Progress of the individual against his own record and in terms of his potential took the center of interest. Teachers encouraged pupils to develop processes of self-evaluation. They helped each child maintain an individual folder which contained four sections: (1) a statement of the goals set by the committee in which he would be working and a record of achievements toward these goals; (2) a statement of the pupil's own current goals with a record of achievements; (3) samples of work done during the current unit or skills program; and (4) written appraisals by the student, the parent, and the teacher concerning the progress and the quality of work done by the pupil at weekly intervals or at the culmination of a unit of work. For each child the teacher kept a folder containing intelligence profiles, achievement profiles, anecdotal records or case studies, health records, and other tests or instruments used for diagnostic purposes.

The pupil's folder could be taken home continually for perusal by parents, and thus became the principal reporting medium. Regu-

lat conferences between teacher and parents became a part of the reporting procedure. The folder maintained by the teacher was used occasionally in teacher-parent reporting conference. The pupil's role in such conferences was to account for his own progress rather than to receive corrective directions. A more confidential report was given the parent after the dismissal of the pupil from the conference. Teachers reported that this procedure was very time-consuming but nevertheless very rewarding. Pupils assumed more responsibility for their learning and appeared to receive motivation from the reporting conferences. Where this method was tried, parents were enthusiastic in their praise for the procedure.

IMPLICATIONS OF THE NEW CURRICULUM

The teaching, supervisory, and administrative staffs of the rural schools of Delta County had placed emphasis upon curriculum change during the three years, and, in so doing, might have misled some to assume that swift and unreasoning changes had taken place and that too little respect had been demonstrated for traditional educational practice. Important changes did take place in some of the schools enriching rather than displacing the time-honored values. On the other hand, because of the blight of tradition there were unobserved opportunities to make worthwhile changes for the welfare of children. Few of the people involved in the project desired to have their program labeled "progressive." Rather, they desired to think that what they were doing was based on sound research and experience, and while it was new to them in some respects, it was not new to other members of the teaching profession elsewhere. Their program, of course, has some unique characteristics, especially as the new curriculum takes notice of local color and resources. In general, the mental hygiene curriculum in Delta County is time-tested and calculated to develop better American citizens through a more truly American education. Finally, the program has as its central aim the development of psychological maturity among the children and youth who will spend their formative years in its educational climate.

SUMMARY

The imperative need of curriculum change to reduce the cultural lag manifest in education today should not need argumentation in order to elicit coöperative participation by all professional personnel in efforts to change the curriculum. This task will require the greatest possible efficiency and harmony if the professional community is to move toward the recognized goals of American education. These goals include the attitudes and behaviors of democracy. It is important to attack coöperatively indifference, pettiness, egocentricity, resentment, and intolerance. There is need to build among school people greater interest and enthusiasm for democratic participation in both professional and community affairs, to furnish situations which demonstrate that each person has a contribution to make to group endeavor, and to foster the disposition among teachers to share ideas for the best solution of common problems.

Since democracy depends for its existence upon effective group thinking, it is high time that professional school people develop true skill in the use of democratic process by utilizing and sharpening such skills constantly in all of their relationships. The degree of skill developed will determine ultimately the degree of success the society will achieve in making democracy operational in the general population.

Action research is the most promising process in any effort to improve the curriculum. It involves the participation of the people whose behavior change is required if school operations are to be changed. There is an exploratory quality to action research which takes individuals and groups to goals beyond their original expectations. Many people in America are aware of the need for curriculum change to meet the demands of life in the space age and especially to help humanity to grow up psychologically and socially, if not spiritually. This awareness must be translated into experimentation of the type provided by action research. Formal experimentation has its place in educational research; however, it

has limited applicability to behavioral changes in teachers, parents, pupils, and administrators in the typical school situation. Action research changes people, and that is ultimately the only change that matters.

Selected Readings

Amer, M. Benedict, "Helping Beginning Teachers," *Bases for Effective Learning*, Thirty-first Yearbook, Washington, D.C., *The National Elementary Principal*, NEA, 1952. Pp. 144-146.

Bailard, Virginia, "Teachers' Mental Health," *Clearing House*, XXVIII (January, 1954), 283-284.

Burton, William H., and Brueckner, Leo J., *Supervision: A Social Process*, 3rd ed., New York, Appleton-Century-Crofts, Inc., 1955. Chapters 2-7, 12, and 16.

Dayton, Benjamin, "How Elementary Principals Can Improve Instruction," *American School Board Journal*, CXXXII (May, 1956), 37-39.

Drummond, Harold D., "Creating Good Living Conditions for Teachers," *Bases for Effective Learning*, Thirty-first Yearbook, *The National Elementary Principal*, NEA, 1952, pp. 139-142.

"First-Year Teachers in 1954-5," *National Education Association Research Bulletin*, XXXIV, No. 1 (February, 1956), 1-48.

Haake, Bernard, "A Letter to an Administrator," *Clearing House*, XXVIII (January, 1954), 520-522.

Krug, Edward A., Babcock, Chester D., Fowlkes, John Guy, and James, H. T., *Administering Curriculum Planning*, New York, Harper & Bros., 1956.
Entire book.

Krug, Edward A., *Curriculum Planning*, New York, Harper & Bros., 1957.
Entire book.

Linder, I. H., "Secondary Principals and Staff Morale," *American School Board Journal*, CXXXI (October, 1955), 25-27.

Otto, Henry J., *Principles of Elementary Education*, rev. ed., New York, Rinehart and Co., 1955.
Chapters 9 and 15.

Shuster, Albert H., and Wetzler, Wilson F., *Leadership in Elementary*

School Administration and Supervision, Boston, Houghton Mifflin Co., 1958.

Chapters 1-3 and 6-10.

Spain, Charles R., Drummond, Harold B., and Goodlad, John I., *Educational Leadership and the Elementary School Principal*. New York, Rinehart and Co., Inc., 1956.

Chapters 1, 4, and 5.

The Flexible Schools: A Guide to School Planning, Washington, D.C., Department of the Elementary School Principals, NEA, 1957.

The Superintendent as Instructional Leader, Thirty-fifth Yearbook, Washington, D.C., American Association of School Administrators, 1957.

CHAPTER 18

Curriculum Improvement Through Self-Evaluation

Cooperative self-evaluation of a school program by its own staff leads directly to curriculum improvement—improvement of teaching and learning—in such a way as to build teacher morale, develop wholesome democratic attitudes among members of the staff, and promote sustained professional growth by each individual teacher.

Sharing of ideas, techniques, and materials among teachers is one of the strengths of the profession and leads to professional growth by all. The process of sharing is especially helpful to those just beginning to teach. Modern instructional supervision seeks to stimulate sharing in every way possible.

Teachers constantly seek to improve the quality of teaching and learning in their classrooms. This is particularly true when they see a need for improvement, when they are given freedom to try their own ideas, and when they are assisted by persons and processes.¹ The process of cooperative self-evaluation provides all of these conditions. Motivation is largely internal, intrinsic to the process.

As an aid to curriculum improvement, self-evaluation takes teachers where they are, individually and as a group. It helps them to grow without feeling that they are being inspected or criticized. Thinking and planning are stimulated by group participation. Fears are reduced and feelings of security and status develop in the peer group. The focus is upon what is good for the children.

¹ Arthur J. Lewis, "Cooperative Self-Evaluation Can Aid Curriculum Development," *Educational Leadership*, XI, No. 8 (May, 1954), 482-485.

WHAT IS SELF-EVALUATION?

Self-evaluation of a school program implies an internal appraisal within a school or school system by those who are directly involved in the development of the curriculum. Individuals on the professional staff, a committee of teachers on a grade level, vertical groups representing several levels or the entire school—all, depending upon the frame of reference, develop *appraisals of their practices by themselves*. Self-evaluation is the democratic process applied to program evaluation. This plan of self-appraisal is opposed to authoritarian appraisal by outsiders. It does not rule out help from the outside, but it encourages a school or school system to take a candid look at itself. Self-evaluation, then, implies mass involvement in evaluation by those who participate in what is to be evaluated.

Coöperative self-evaluation of the school program is itself a process for professional growth. It leads to curriculum improvement. Emphasis is placed upon sharing the good, helping the weak, developing staff morale and mental health, and developing an understanding by each individual of the total program of the school. It helps a school staff to develop the data and the self-assurance to meet hostile attacks on the school. It furnishes to the administrator, the school board, and the public a comprehensive report on the status of the school program together with plans for initiating improvements. Its focus is not upon individual teacher rating but upon the program of school life.

HOW SELF-EVALUATION WORKS

The plan for program evaluation presented in this chapter is suggested because of its workability, simplicity, and flexibility. The program can be undertaken and completed for a report within a school year. Ideally, this process will be undertaken by the staff each school year and become a continuous program. It can be developmental, too, in that the tasks begun in one year may be continued in succeeding years. However, each year will have its

comprehensive report which may be considered a progress report for programs extending for several years.

Before the plan can swing into operation, the school administrator should procure adequate copies of the criteria for distribution to staff members. The school board should be informed. The entire staff and school board should be given some orientation on the purposes and operation of the project. Provision should be made either for the appointment of committees or for the group to develop its own organization. Whether the committee chairmen, for instance, are to be appointed by administration or elected by the personnel of the particular committee involved may be a matter to be worked out during the orientation period. Individual teachers should be assured that their own written evaluations will not be identified by, or referred to, those above the grade level committee.

The operational process begins with the individual teacher who writes down *what he actually does in his teaching situation* in terms of the general evaluative criteria set forth below. The emphasis is upon recording what the teacher does in behavioral statements. Next, the descriptions of practices should be followed by a listing and analysis of strengths and weaknesses in these practices. The third step calls for a listing of suggested improvements with some suggestion on how these are to be carried out. Thus for each category under the general criteria, the evaluator will write: (1) a description of practices, (2) an analysis of strengths and weaknesses, and (3) suggestions for improvement. This same pattern will be carried out in the reports of all individuals and committees including the final comprehensive report for the school as a whole.

The operational spotlight moves from the individual evaluations to the horizontal or grade level committee. Here the individual shares his practices, analyses, and suggestions with colleagues who teach on the same level. In this sharing process, teachers often boost the morale of their colleagues by observing that many good practices may have been recorded too modestly or some not at all. Participants will be alert to new ideas. The sharing of analyses of strengths and weaknesses as well as suggestions for improvement

can be very rewarding for the individual. It is a rich learning experience for all. This sharing of ideas in this horizontal committee can be one of the most important functions of the self-evaluation. The best ideas of this group will tend to become operational in all classrooms of the grade while the less desirable practices will tend to wither away. The report of the horizontal committee is a consensus or composite report in which the identity of the individual is lost. It is now a picture of the teaching program of that particular grade expressed in practices, strengths and weaknesses, and suggestions for improvement.

From the grade level committee, the program evaluation turns into the vertical stream. Several grade levels are grouped for a continuation of the sharing and analyzing process begun in the horizontal committee. Thus, there may be a primary grade committee, an intermediate grade committee, etc., each eventually preparing a report of practices characteristic of the division. Each school or school system will decide how these divisional vertical groups should be organized on the basis of its size and other factors peculiar to its internal organization. Questions of sequence and articulation may enter the deliberations of these vertical committees. As before, the composite reports of these groups will be expressed in terms of practices, strengths and weaknesses, and suggestions for improvement.

The reports of the various divisional levels are received by a central committee of the school which is composed of representatives of each grade level (usually the chairman of the horizontal committee), representatives of parent or community groups, and representatives of supervision, administration and the school board. This report becomes the summary report for the school as a whole. All problems affecting a total school program should be included in the deliberations even if not previously recorded in the reports submitted to the central committee.

If it is desirable to formulate a self-evaluation report for an entire school system, each school unit will undertake a program along the lines indicated above. Except in the case of very large school districts, the reports of each school will be forwarded to a central

committee of the school district composed of representatives of each school, representatives of parent groups, representatives of the school board, and representatives of the central administration and supervision staffs. The report of this committee will be forwarded to the superintendent and to the president of the school board.

For very large districts in large metropolitan areas, for instance, an additional horizontal grouping should be inserted into the above pattern for district-wide evaluation. Since composite reports will tend to disguise significant differences among schools, especially those with widely different socio-economic settings, schools with similar community backgrounds should be grouped together for sharing and reporting. The characteristics of these differing community backgrounds and their inevitable effects on the curricula of the schools should be carefully noted in the final summary report for the school system.

At every level of the evaluative process, the free flow of ideas should stimulate both immediate and future improvements in the curriculum. A plan for continuous self-evaluation by the instructional staff should furnish a springboard for continuous curriculum development and professional growth.

THE USE OF EVALUATIVE CRITERIA

The criteria presented below do not structure evaluations to the point where a practice is judged good or bad. Specific educational values will be discussed by each local group. Growth will take place in terms of where the group is at the moment. Comparisons with teaching elsewhere are not necessarily intended. The general framework of the criteria has been developed with a view to the needs and characteristics of children, advancing educational thought, and the role of the school in a rapidly changing culture, but response to these criteria will guarantee no one correct answer. Each evaluation will necessarily be relative and unique. The criteria provide freedom for the individual and for the group to report the uniqueness of each situation by those who are closest to it. Since

behavioral statements are desired, intricate rating scales or check lists are not provided.

A WORD OF CAUTION

Teachers and administrators generally attend a great many faculty meetings and complete a great many reports during a school year. The program of coöperative self-evaluation, if merely superimposed upon an already crowded calendar, will suffer. If the program is to be launched wholeheartedly, administrators should make an effort to (1) reduce the number of reports required annually of the teacher; many existing reports will overlap with the evaluation report; (2) set deadlines for the various reports but allow groups to meet informally at the time and place of their own choosing; and (3) stretch the schedule of reports out over a period of at least ten weeks. Most important of all, administrators should not attend meetings of the grade level or horizontal committees unless specifically invited. For best results these meetings, the most important of the whole process, should be informal and confidential. Teachers may be encouraged to hold these meetings at home if desired. Probably these meetings should not be scheduled officially at all. The individual teacher's written evaluations require no meetings and may be developed like anecdotal records throughout the school year.

EVALUATIVE CRITERIA

Directions for best use of the following criteria. Write in paragraph form *what you actually do* with respect to *each* question. After describing what you do, analyze your practices and summarize your strengths and weaknesses. Finally, list the improvements you would like to make or plan to make in your practices with respect to each question.

CRITERION I: WAYS OF DETERMINING INDIVIDUAL DIFFERENCES AMONG CHILDREN

A. Is there a testing and evaluation program in operation in your school which helps you to discover the nature and the degree of differences among children? Describe it.

- B. Has the data derived from this testing program been summarized in some meaningful form and made available to teachers? If so, attach it.
- C. What other ways have you developed for discovering the individual needs, interests, and abilities of children?
- D. Are cumulative records kept on each child and passed on to his next teacher? What do these contain?

CRITERION II: THE RELATIONSHIP OF GOALS AND METHODS IN TEACHING

- A. How are the ideals and the behaviors of democracy taught?
- B. How are children taught to think and to solve problems?
- C. How do you provide experiences suited to the differing needs of children?
- D. How does the emotional climate and the class organization help each child develop at a rate consistent with his own maturation and ability?
- E. How do children in your situation go about learning the basic skills and fundamental processes?
- F. How do children contact subject matter in your situation?
- G. How do you develop behavior controls and discipline among children?
- H. Is your total performance as a teacher fairly consistent with your educational philosophy? Summarize your philosophy briefly.

CRITERION III: THE SETTING FOR LEARNING

- A. How do your educational objectives influence the physical arrangement of the classroom?
- B. Do you participate in the selection of supplies and equipment on the basis of your educational objectives and of the specific needs of children? Explain.
- C. How do you help children develop increasing responsibility for the wise use of materials, space, and equipment?
- D. How do you improvise with materials when the desired supplies are not available?
- E. Do the methods for distribution of supplies and materials as well as the quality of these items facilitate or impede the learning process in your situation? Explain.

F. How has the emotional climate of your classroom(s) contributed to the growth and development of your pupils this year? Record at least one brief case study.

CRITERION IV: HOME-SCHOOL-COMMUNITY RELATIONSHIPS

- In what ways do you regularly meet and consult with parents?
- How do you use the special talents of parents and other residents of the community in the instructional program?
- In what other ways do you use the community as a laboratory for learning?
- Do school programs to which the public is invited utilize the talents of all or most children rather than the gifted few? Explain.

CRITERION V: EVALUATING AND REPORTING PUPIL PROGRESS

- How do you help pupils participate in the evaluation of their own progress?
- What procedures do you use for securing, recording and using information about children and their learning?
- Typically, what factors do you discuss with parents in your conferences with them?
- How does the child participate in reporting his progress to parents?
- Do you use a comparative marking system or an individual progress system for recording evaluations? What advantages would you claim for using one or both in your situation?

A SCHOOL DISTRICT EVALUATES ITS PROGRAM

Below are excerpts from a comprehensive report of the central committee of the Casa Grande (Arizona) Elementary school district which participated in a coöperative self-evaluation project based on the criteria presented above. The faculty of the school district began its coöperative study in early December and completed its final report in early May. District personnel faithfully followed the plan for each step in the process. The information and attitudes shared contributed much to immediate and ultimate change in the school program at all levels. In fact, a definite program of action-research emerged from the evaluation, which is briefly reported after the excerpts from the evaluation report of the

central committee given below. The superintendent, Mr. John Bendixon, furnished excellent leadership throughout the curriculum evaluation program.

CRITERION I: WAYS OF DETERMINING INDIVIDUAL DIFFERENCES AMONG CHILDREN

A. Is there a testing and evaluation program in operation in your school (or school district) which helps you to discover the nature and the degree of differences among children?

1. Practices

- a) Reading Readiness Test (Lee-Clark)
- b) Basic Reading tests for Grades 1, 2 and 3 at both levels of each
- c) California Achievement Battery
- d) Music: Test 1-Musical Aptitude Test—Whistler and Thorpe (California Test Bureau)
Test 2-McCreary Test of Musical Aptitude

2. Strengths

- a) Measurement of year's growth
- b) Rank in class
- c) Basis for diagnosis
- d) Percentile rank in terms of national norm
- e) Profile sheets available to teachers

3. Weaknesses

- a) Program limited
- b) Given in April, little use to present or next teacher

4. Suggestions for Improvement

- a) Two achievement tests during year, and IQ test every three years
- b) Machine scoring of tests
- c) Special room for basic reader tests

B. Has the data derived from this testing program been summarized in some meaningful form and made available to teachers?

1. Practices

- a) Results summarized in profile form
- b) Achievement recorded on permanent record cards

2. Strengths—none

3. Weaknesses

- a) Profiles not available to teachers long enough
- b) Profiles not available for transients

4. Suggestions for Improvement

- a) Duplicate copies of test results for teachers
- b) Wider range of subject matter areas

C. What other ways have you developed for discovering the individual needs, interests and abilities of children?

1. Practices

- a) Permanent record cards
- b) Observing physical dexterity
- c) Play interests
- d) Nurse's reports
- e) Comments by others
- f) Listening in school
- g) Listening on playground
- h) Talk about TV
- i) Movies
- j) Drawings
- k) Home visits
- l) Observation of written work
- m) Extracurricular activities
- n) Personal experiences
- o) Storytelling from pictures
- p) Science and hobby sharing
- q) Biographies
- r) Diaries
- s) Dramatics
- t) Interviews, formal and informal, with parents, youth leaders, former teachers
- u) Sociograms
- v) Anecdotal records
- w) Conversation period
- x) Observation of work habits
- y) Observation of reading habits

2. Strengths—none

3. Weaknesses

- a) Not well organized
- b) Lack of resource material
- c) Lack of time

- d) Too few conferences with parents
- e) Too heavy class load

4. Suggestions for Improvement

- a) One compact collection of data pertinent to needs
- b) Smaller pupil load
- c) More descriptive enrollment card

D. Are cumulative records kept on each child and passed on to his next teacher? What do these contain?

1. Practices: A permanent record card includes a health report, days in school, days absent, grades, teachers' comments, age, address, list of books read, grades on reading tests, grade placements, class room grade average
2. Strengths—none
3. Weaknesses
 - a) Incomplete information
 - b) Family information not up to date
 - c) Not in teacher's possession

4. Suggestions for Improvement

- a) Factual remarks section inserted on record card
- b) Facts on health, physical difficulties, talents added
- c) Enrollment card for principal, leaving permanent record card in teacher's possession
- d) Cumulative record folder including:
 - (1) Knowledges and basic skills learned
 - (2) Strengths and weaknesses in all areas of the curriculum
 - (3) Parental relationships
 - (4) Samples of best work (to be discarded each year after being studied by new teacher)
 - (5) Social adjustment

CRITERION IV: HOME-SCHOOL-COMMUNITY RELATIONSHIPS

A. In what ways do you regularly meet and consult with parents?

1. Practices: there are no planned meetings with parents. (This was an area of concern to the faculty which precipitated action research on the school district's whole plan for evaluating progress and reporting to parents.)
2. Strengths—none
3. Weaknesses—none

4. Suggestions for Improvement

- a) Institution in the school district of teacher-pupil-parent conferences
- b) A year's study on methods of evaluation

B. How do you use the special talents of parents and other residents of the community in the instructional program?

1. Practices: resource persons in experience units

2. Strengths—none

3. Weaknesses—none

4. Suggestions for Improvement

- a) Supervisory and administrative help in surveying community for resource persons
- b) Additional funds for field trips

C. In what other ways do you use the community as a laboratory for learning?

1. Practices: teachers report use of the following:

- a) The bus station
- b) The railway station and trains
- c) Bakery
- d) Grocery store
- e) Flower shop
- f) Local homes
- g) The community park
- h) Window displays
- i) School grounds
- j) Nature and science walks
- k) Civil workers
- l) Widely traveled citizens
- m) Businessmen
- n) Organization members
- o) Health and safety workers
- p) Community library

2. Strengths

- a) Broadens resources for learning
- b) Interesting to both pupils and teachers

3. Weaknesses

- a) Time-consuming
- b) School buses not available

4. Suggestions for Improvement

- a) Better planning
- b) Two trips yearly for each grade.

FROM REPORT CARDS TO CONFERENCES

Emerging from the six month in-service program of coöperative self-evaluation, an action research study was undertaken by the *Casa Grande (Arizona) Elementary Schools* to determine if the school district should make important changes in its evaluation and reporting procedures. The difficulties staff, pupils, and parents were cognizant of fell into these general categories:

1. Pupil marks converted to percentage grades were unreliable and unfair.
2. The comparative marking system was attacked for its mental health hazards.
3. The system of determining pupil grades unduly influenced the way in which the curriculum was designed.
4. Evaluation tended to be of the judgment type rather than diagnostic.
5. The report cards in use tended to place emphasis on the extrinsic rather than the intrinsic values of learning.

During the experimental year,² parents who volunteered for the new program by selecting the reporting conference rather than the report card joined with the teacher and the child in three conferences during the school year. The rationale for the conferences was:

1. The pupil will be invited to open the reporting by presenting his appraisal of his own progress in school studies. He relates how he has progressed toward the goals which he has set for himself under teacher-parent guidance.
2. Discussion of the pupil's report of self-evaluation will be encouraged, with appropriate interpretations being made by the teacher to the parent and vice versa.
3. The pupil will present his self-selected goals for the next marking period and have them approved by the teacher and by the parent.

² Plans for the experimentation with the teacher-pupil-parent conference were made in the spring of 1958. The experimental year was 1958-1959.

4. The pupil will be dismissed from the conference, and the teacher and parent will continue the conference in a more confidential fashion. The teacher will report whatever factual data is available on the work of the child. Plans will be made jointly to help the child with any problems he may have with his intellectual or social learnings.

Other parents in the community who do not choose to elect the conference method of reporting continued to receive the regular report card. No parent was coerced into the action research project against his will. This study had far-reaching effects on the curriculum as a whole. For this type of conference has significant implications for an evaluation program which emphasizes pupil self-evaluation. Self-evaluation leads to self-direction in learning activities. When teachers organize and guide a classroom process within which self-direction is an integral part of the curriculum, significant changes occur in that curriculum.

SUMMARY

The two studies recorded in this chapter reflect the democratic way in which a school and its community can bring educational practices under systematic scrutiny and construct plans for curriculum improvement. The evaluation is performed by those most able to evaluate and to carry into action the suggested improvements, namely, the pupils, the teachers, supervisors, administrators, and parents of the children in that particular school or school district. When the program of the school is carefully evaluated year after year with the methods outlined in this chapter, continuous improvement can be expected. The coöperation of parents and other interested persons in the community will ultimately serve to protect the school and its staff from unreasonable attacks, for to participate is to understand. An informed and understanding public will not permit the school to labor under unjustified criticism and deprivation.

Selected Readings

Association for Supervision and Curriculum Development, *Better Than Rating*, Washington, D.C., NEA, 1950.

Association for Supervision and Curriculum Development, *Creating a Good Environment for Learning*, 1954 Yearbook, Washington, D.C., NEA

Beauchamp, G. A., *Planning the Elementary School Curriculum*, New York, Allyn & Bacon, 1956.
Chapter 15 "Evaluation," pp. 260-273.

Caswell, H. L., *Education in the Elementary School*, New York, American Book Co., 1950.
Chapter 3, "Check List on General Characteristics of a Good Elementary School," pp. 64-69.

Southern Association of Colleges and Secondary Schools, *Elementary Evaluative Criteria*, 2 vols., Atlanta, Ga., Southern Association of Colleges and Secondary Schools, 1949.

Southern Association of Colleges and Secondary Schools, *Evaluating the Elementary School*, Atlanta, Ga., Southern Association of Colleges and Secondary Schools, 1951.

Southern Association of Colleges and Secondary Schools, *Promising Practices in Elementary Schools*, Atlanta, Ga., Southern Association of Colleges and Secondary Schools, 1952.

INDEX

Aesthetic and moral values, 33-34
Arithmetic, 191, 208, 229, 238-241, 255-258, 274, 293, 311, 335-336
Art, 182-185, 189-192, 228, 235, 277-280, 287-288
Association for Childhood International, 6
Association for Supervision and Curriculum Development, 90-91, 118-120, 139-140, 404

Basic skills, persistent problem of learning, 29
related to task situations, 30-31, 214, 231-233, 238-241, 252, 255-258, 288, 293, 302-304, 311, 317-320, 322-324, 337
Bossing, Nelson L., 9, 46-47
Brownell, William A., 29
Burton, William H., 59, 99, 105

Carroll, Herbert A., 25
Caswell, Hollis L., 102
Climates, social and emotional, effects on personality, 47-54
and mental health, 52-53
types of, 44-47
Competition, co-operation-competition expectancy, 54-57
mental health hazards in, 54-56
questionable use for motivation, 57
Cook, Walter W., 138, 147-148
Corey, Stephen M., 364
Counts, George S., 357-358
Cultural change, 349-355
Cultural heritage, 35-37
Curriculum, changes in, 10, 345-351, 355-362, 364-404
continuity, 119-140
cooperative evaluation of, 391-404
curriculum records, 372-374
definition of, 3

Curriculum (*cont.*)
democratic problem solving design of, 4
individualization, 82-118
purposes of, 13-41

Davidson, Henry A., 56
Delta County Curriculum Project, 128-134, 375-387
Democracy, democratic climate for learning, 44-47, 52-53
democratic process, 62-65
do-democracy, 9
equality of opportunity in, 11
relationship to authoritarianism, 6-8
relationship to laissez faire, 6
relationship to science, 5
as a total way of life, 7
Dewey, John, 11, 66, 357
Discipline in the classroom, 57-60

Elementary education, nature of, 3
purposes of, 41
Emotional security, 14-19
Enrichment, 107-108
Evaluation, anecdotal records, 152
case studies, 153-161
instruments and records, 146-161
intelligence testing, 148
marking, 161-164
purpose and function, 141-146
sociogram, 150
Ever-Expanding Horizons of Experience, 128-134
Experience charts, 206, 209, 211-213, 223, 255

Faunce, Roland C., 9, 46-47
Feeling of achievement, 24-26
Feeling of belonging, 19-24

Gesell, Arnold, 122-123
 Gifted child, 109-111
 Grouping, by ability, 100-101
 within the classroom, 106-107
 functional grouping, 113-114

Havighurst, Robert J., 120-121, 149
 Heredity, 59, 87
 Hurlock, Elizabeth B., 87, 92

Individual differences, in achievement, 24-26
 in emotional development, 14-19
 in heredity, 86-87
 in interests, 92-96
 in learning, 87-92
 in mental age or IQ, 83-85, 89

Individualized teaching, 112-118, 241-247, 302-304
 Interests, 92-96
 Isenberg, Robert M., 57

Kelher, Alice V., 138
 Kelley, Earl C., 125-126, 135
 Kelley, Janet A., 124
 Kilpatrick, William H., 357
 Kindergarten education, kindergarten year, 185-191
 purposes and concerns of, 192-197

Laissez faire, 6, 44-47, 51-52
 Language arts, 208-214, 219-225, 229-231, 252, 259-261, 279-293, 296-301, 303-308, 310-324, 332, 334

Lewin, Kurt, 44-46
 Lindquist, E. F., 89

MacIver, Robert M., 353-354
 Melby, Ernest O., 29
 Mental health, and democratic climate, 52-53
 hazards in competition, 54-56

Miel, Alice, 347
 Millard, Cecil V., 87
 Music, 177, 237, 267, 283, 288, 316

Ogburn, William F., 352-353
 Olson, Willard C., 34, 89, 114-115, 170
 Otto, Henry J., 55
 Overstreet, Harry A., 35

Pacing, 115
 Personality, autocratic personality, 48-49
 democratic personality, 49-51
 laissez faire personality, 51-52

Persistent life situations, 126-218
 Physical security and health, 26-29
 Plato, 82
 Prescott, Daniel A., 14, 19-20
 Problem project, 66-79
 Problem solving, continuity in problem solving, 134-138
 democratic problem-solving process, 62-80
 problem approach to curriculum improvement, 364-366
 steps in, 67

Promotion, promotion policies, 168-171
 research on promotion and non-promotion, 101-102, 169

Raths, Louis E., 29
 Readiness program, 203-204
 Reading, 114, 204-206, 214, 242-244, 279-280, 293-296, 310-311, 321-323, 329-332

Reporting to parents, agenda for conferences, 166-168
 pupil's folder, 165
 teacher-pupil-parent conference, 164-168
 teacher's folder, 165-166

Rugg, Harold, 346
 Russell, David H., 101-102, 106

Science, 2, 5, 62-79, 186-192, 206-214, 218-227, 236-237, 248-266,

278-279, 296-297, 304, 312, 326-337

Self, self-appropriation, 96-98
 self-direction, 164-168
 self-discipline, 246
 self-evaluation, 141-143, 164-168, 267-268, 392-393
 self-instructive materials, 103-104
 self-selection, 114-115

Shane, Harold G., 94

Slow learner, 111, 112

Social Studies, 181-192, 200-203, 206-214, 237-241, 269-286, 304-308, 309-316

Sorokin, Pitirim, 349, 354-355

Stratemeyer, Florence, 94, 126-128

Symonds, Percival M., 14

Teacher-pupil planning, 182-185, 207, 220, 226, 237-239, 249-252, 270, 273, 310-311, 326-328

Thayer, Vivian T., 9

Washburne, Carleton W., 101-102

Witherington, H. Carl, 25, 92

World Peace, 38-40

Wrightstone, J. Wayne, 101

Writing, original plays of children, 281-283, 305-308, 311
 original poems of children, 224, 253, 293-294, 299-301
 original stories of children, 219, 221-224, 230-231, 284-286, 289-292, 297-299